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ABSTRACT

This thesis uses a resource theoretical approach to study and analyze social psychological phenomena in different age-cohorts. Resources are seen as any asset the person has access to in a certain situation. Access to resources are crucial to meet the demands of the surrounding environment. When the resources are sufficient to cope with the surrounding environment there will be a greater freedom of choice to manipulate or to not be unnecessarily manipulated by the environment. In older age cohorts access to resources is lower than in younger age cohorts, where access depends on aging, cohort, and/or historical reasons. The model suggests three different categories of resources: individual, interpersonal, and institutional. Individual resources are exemplified by health, interpersonal by social network, and institutional by social position. The gap between actual and perceived resources can be understood by a construct called the self-reference system. The actual resources and the way these are perceived influence feelings and behavior such as activity level, loneliness, and life satisfaction. This also means that the use of age or age cohorts to explain feeling and behavior often is misleading. It is much more convincing to categorize people according to access to resources rather than to their age. Some aspects of the model were empirically studied in a non-proportional stratified random sample of 130 persons in 5 age cohorts. The results provided strong support to the model. (Author/LLL)

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Access to Resources in different Age-cohorts

Implications for activity level, loneliness and life satisfaction

Bo Malmberg

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DOCTORAL THESIS

by due permission of the Board of the Faculty of Liberal Arts and Sciences at Linköping University, to be publicly discussed at the Department of Education and Psychology, house I (Ingvar), room Eklundska salen, Valla Linköping, at 10 o'clock on the 11th of May, 1990 for the Degree of Doctor of Philosophy in Education.

ABSTRACT

This thesis uses a resource theoretical approach to study and analyze social psychological phenomena in different age-cohorts. Resources are seen as any asset the person has access to in a certain. Access to resources are crucial to meet the demands of the surrounding environment. When the resources are sufficient to cope with surrounding environment there will be a greater freedom of choice to manipulate or not unnecessarily be manipulated by the environment. In older age-cohorts access to resources is lower than in younger age-cohorts, whether it depends on aging, cohort and/or historical reasons.

The model suggests three different categories of resources; individual resources, interpersonal resources and institutional resources. The individual resources are exemplified by health, the interpersonal by social network, and the institutional by social position. An important distinction is made between actual and perceived resources. The model suggests that the gap between actual and perceived resources can be understood by a construct called self-reference system. The actual resources and the way these are perceived, influence feelings and behaviour like activity level, loneliness and life satisfaction. This also means that the use of age or age-cohorts to explain feeling and behaviour often is misleading. It is much more convincing to categorize people according to access to resources rather than to their age. Thus, irrespective of age, if resources are comparable, feelings and behaviour will be at least broadly comparable. Differences in age can be used as an explanation primarily due to differences in resources implied in the concept of age, not to age itself. Some aspects of the model were empirically studied in a non-proportional stratified random sample of 130 persons in each age-cohort born 1943, 1933, 1923, 1913, 1903. The results give strong support to the model, considering the crude measurements used.

INDEXED: Resources, Perceived resources, Age, Sex, Health, Social network, Social position, Activity, Loneliness, Life satisfaction.

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Without the interpersonal resources I have access to, my individual resources certainly would not have been sufficient to carry through the work with this thesis.

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The ideas, that the resource model presented in this thesis is based on, are only partly mine. They have developed over the years in endless discussions with my colleagues at the Institute of Gerontology, Jönköping, Stig Berg and Boo Johansson and former colleague Torbjörn Svensson, now working at Gerontological Centre, Lund. Their influence is such, that I really don't know where my own thoughts start and their's end. I wish to express my gratitude to them. I wish to extend my gratitude to all other colleagues at the Institute of Gerontology, Jönköping, for their support. The "Karlsson sisters" Lena and Susanne for writing and rewriting of the manuscript, Monica Tubbin for all her help and Gerdt Sundström for revision of the language. The language is also revised by Barbara Gunn, University of Nevada, Reno and, especially, by T. Brian Beattie, Linköping. I wish to thank Ingun Wildrot-Tjädermo for her work with the final script.

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Chapter I.

SUMMARY

Most research in the social psychology of aging is based on a role theory tradition. Role theories are often comprehensive and in agreement with common sense. The literature demonstrates, however, that this traditional approach is often vague and difficult to specify in the search for new knowledge.

In this thesis an alternative approach, based on resource theory is suggested for analyzing social psychological phenomena related to aging. Core concepts of the resource theory model are actual and perceived resources. Resources are seen as any asset the person has access to in a certain situation. Actual and perceived resources are assumed to determine feelings and behaviour. The model suggests that the gap between actual and perceived resources can be understood by a construct called a self-reference system. Further, it is argued that actual assets, perceived assets, the self-reference system and the dependent feelings must be understood in an environmental context and in a temporal perspective.

In chapter II the model is outlined and normative adaptation in terms of activity, loneliness and life satisfaction is discussed. These three domains of normative adaptation are used separately as dependent variables in the empirical testing.

Chapter III gives a brief overview of the current state of the social psychology of aging. The difficulty of disentangling the effects of age, period and cohort is discussed and other methodological considerations are noted. A selective review of socio-gerontological theories is presented which shows that the predominant tradition is role theoretical. The emerging resource theory approach is especially emphasized.

In chapter IV, the resource theory model is elaborated. The actual resources are divided into three categories: individual, interpersonal, and institutional resources. To fully cover the three categories of resources is, of course, impossible. However, the different categories of resources can be represented by means of access to assets of the three different categories. These actual assets are here proposed to be self-reported health, primary social network, and social position representing individual, interpersonal, and institutional assets, respectively.

The importance of the perception of the resources is discussed. A self-reference system is introduced to handle the potential gap between actual and perceived resources. This system is based on earlier experiences, comparisons with reference groups, and/or personality factors. The three levels of the model - actual resources, self-reference system, and perceived resources - are assumed to have an effect on the dependent variables in constant interplay with the surrounding environment. The dependent variables activity level, loneliness, and life satisfaction are discussed.

In chapter V, material and method in the empirical study are presented. Data have been collected as part of an omnibus investigation primarily directed towards odontological inquiries. This fact limits the study to the core concepts of the theoretical model, that is, the impact of actual and perceived assets on dependent variables such as activity level, loneliness and life satisfaction. The theoretical assumed self-reference system and the surrounding environment have not been included in the empirical analyses.

The aim of the empirical study was twofold: to test the core concepts of the theoretical model and, while doing so, to describe the age-cohorts by means of the variables selected. The methods employed, and statistical considerations are described. The possibility of using path analysis to illuminate the causality of the model is discussed. The structure of the sample made it possible to add age-cohorts as a causal agent of differences in access to actual assets and to study the direct impact of age-cohort on the dependent variables. A testable model based on the theoretical resource model is presented as a path diagram.

The available sample included 130 persons in each age-cohort born in 1963, 1953, 1943, 1933, 1923, 1913 and 1903. The goal was to reach about 100 persons in each age-cohort of 20-, 30-, 40-, 50-, 60-, 70- and 80-year-olds. The 675 persons who participated are compared to the population and the representativeness regarding age and sex is analyzed briefly.

In chapter VI, the results concerning the actual assets are presented. Each of the actual assets have been measured by means of three items that were dichotomized and added to indices as suggested by Galtung (1964). Self-reported health included overall health situation, visits to physicians and medicine intake. Primary social network included marital status, children and daily contacts. Social position included education, work situation and income. When testing the linearity self-reported health among men showed a linear downward trend from the 20-year-old cohort and among women from the 30-year-old cohort onwards. Primary social network peaked for women in the 40-year-old cohort and never showed linearity for men. Social position peaked in the 40-year-old cohort for men as well as for women. As a compromise between keeping the sample as large as possible and linearity, the two youngest age-cohorts were excluded from the further analysis. In this work, gerontology thus starts at age 40.

The trichotomization of the actual assets was validated by means of a factor analysis. This factor analysis gives support to the suggested categorization of the actual assets. Age-cohort was found to be negatively correlated with all three categories of actual assets, which means that self-reported health, primary social network as well as social position were reported to be lower in older age-cohorts.

In chapter VII, the perceived assets are presented. As a consequence of the structure of the actual assets, three categories of perceived assets were constructed, each consisting of two dichotomized items. The scores were added to form three indices. First, the index perceived individual assets was made up of subjective health and perceived ego-strength. Second, the index perceived interpersonal assets was constructed from perceived quality and perceived power in the close social network. Third, the index of perceived institutional assets was created by combining measures of perceived economy and perceived social power.

In accordance with the model, perceived individual assets were found to correlate more strongly with self-reported health than with the other two categories of actual assets. Perceived interpersonal assets correlated most strongly with primary social network and perceived institutional assets correlated most strongly with social position. Perceived individual assets correlated negatively with age-cohorts, indicating lower perceived individual assets in older age-cohorts. The other two categories of perceived assets did not correlate significantly with age-cohorts.

In chapter VIII, the dependent variables perceived activity level, loneliness and life satisfaction are described. The perceived activity level (PAL) is constructed on the basis of activities individuals perform by themselves, activities performed together with close relatives and friends and more formally organized activities. Age-cohort could not be shown to be a main effect on PAL. The relationship with actual and perceived assets is shown. The path analysis using PAL as the dependent variable showed a direct significant impact on PAL from perceived interpersonal assets, social position and primary social network. The impact was, however, low. Altogether the variables did not directly contribute to more than 14% of the variance in PAL. The indirect impact from the independent variables was also low. Age-cohort had no direct impact on PAL, and the indirect impact accounted for less than 2% of the variance.

Roughly speaking, the same pattern emerged when each sex was analysed separately. For women perceived interpersonal assets and primary social network were found to have a direct impact on PAL, contributing to 10% of the variance. For men perceived interpersonal assets, primary social network and social position contributed 19% to the variance in PAL. The indirect impacts were low for both sexes. Age-cohorts did not directly contribute to the variance in PAL.

Loneliness was measured by a five-item scale. A correlation, although low, between age-cohorts and loneliness indicated more loneliness in older age-cohorts. When each sex was analyzed separately this relationship was, however, found only for the women. In the total sample and among the women, age-cohorts were shown to have a main effect on loneliness.

The path analysis with loneliness as the dependent variable, showed a direct significant impact on loneliness from perceived interpersonal assets, perceived individual assets and primary social network, together accounting for 36% of the variance. Age-cohorts did not contribute directly to the variance in loneliness and indirectly it contributed only about 7% of the variance.

Separate path analyses for men and women showed that, for the women, the direct impact of perceived interpersonal assets, self-reported health, perceived individual assets and primary social network contributed about 38% of the variance in loneliness. Among the men the direct contribution from the independent variables was 33% of the variance in loneliness, including 1,5% direct contribution from age-cohorts. Other significant contributors were perceived interpersonal assets, perceived individual assets and primary social network. The direct effect of age-cohorts was positive indicating less feelings of loneliness among men in older age-cohorts. There was no relationship between age-cohorts and loneliness among the women. These results are interpreted in the following way: when the lower access to assets was accounted for, women had no tendency to report more loneliness in older age-cohorts, whereas men showed a tendency to report less loneliness.

Life satisfaction was measured by means of a single item. There was no correlation between age-cohorts and life satisfaction, neither in the total sample, nor when the sexes were analysed separately. The path analysis showed a direct significant impact on the life satisfaction of all three categories of perceived assets. Together with primary social network the perceived assets accounted for about 30% of the variance in life satisfaction. Age-cohorts showed no direct contribution to life satisfaction. The indirect contribution was approximately 7%.

The path analyses indicated differences in life satisfaction between the sexes. For men, perceived individual assets and perceived interpersonal assets together were found to contribute about 26% of the variance. Among women perceived interpersonal assets, perceived individual assets, self-reported health, primary social network and age-cohorts were found to have a significant direct impact on life satisfaction, together contributing to about 35% of the variance. Among women the direct effect indicated higher life satisfaction in older age-cohorts. Thus, when the lower access to assets in older age-cohorts was accounted for, there was a tendency among the women to report higher life satisfaction. As with loneliness among men, the model seemed to qualify the non-correlation found between age-cohorts and life satisfaction among women.

In chapter IX, the resource approach and the empirical results are further discussed. The advantages in using the model as a frame of reference are stressed. The resource approach emphasizes the access to assets (in this case, self-reported health, primary social network and social position) as of prime importance to different feelings and behaviours. The model cannot easily be further reduced, as all the variables used contribute to the variance in the dependent variables at least once. The empirical testing of the model, with its limitations and rough measurements, show surprisingly unambiguous results.

The empirical study did not show any marked decrease in activity level and life satisfaction or marked increase in loneliness in older age-cohorts. The few signs of this, that were nevertheless found, disappeared completely when the effect of access to assets was introduced. Then, rather, men in older age-cohorts reported less loneliness than men in younger ones and women in older age-cohorts reported higher life satisfaction than women in younger ones. Thus, even with the easily gathered data that was used in the empirical study, it seems possible to qualify the influence of differences in age in, for example, feelings of loneliness and life satisfaction. This indicates that age differences as an explanation of differences in feelings and behaviours are troublesome unless access to assets and the perception of these are also considered. Age as an explanatory variable is powerful because differences in access to resources are implied in the concept.

The theoretical model is useful, as an analytical tool, as it points to possible ways to influence feelings and behaviour. Either the resources can be increased, the perception of the resources can be manipulated, or the demands from the surrounding environment can be decreased. Care of the elderly today can be characterized as a striving to reduce the environmental demands. Future care of the elderly will greatly benefit from a concentration on increasing the resources available to them.

Chapter II.

INTRODUCTION

In a stimulating article entitled "Social psychology as history" Gergen (1973) sees not only the major part of social behaviour as dependent on history but also the conceptualization and explanations offered by the social psychologists. And as Mills (1969) states:

> *"Social psychologists want do discover causal relationships so that they can establish basic principles that will explain the phenomena of social psychology"*
>
> (Mills 1969 p. 412)

The aim of this thesis is not to "explain the phenomena of social psychology" but to give a brief outline of an alternative way to understand some social psychological phenomena in the field of gerontology. This alternative conceptualization establishes access to resources as the basic principle for explanation in social gerontology. The concept of resources points to something you have rather than to something you lack. Of course, someone can lack resources but this is still clearer than saying, for example, that someone has unfulfilled needs. The resource concept is thought of as having superiority over concepts like social roles for example, although roles and role-changes have attracted a vast amount of interest in social gerontology. Roles and behaviours are not performed and not changed without reasons. These reasons are, I will argue, basically access to different kinds of resources and this access could be different at different ages.

This also means that the use of age or age-cohorts as a means of explaining feelings and behaviours is often misleading. What groups people together is primarily access to resources rather than age. Thus, irrespective of age, if resources are comparable, feelings and behaviours will be at least broadly comparable. Differences in age could be used as an explanation primarily because of differences in resources implied in the concept of age.

Resources in terms of health, social network and social position are crucial in meeting the demands of the surrounding environment. When the resources are sufficient to cope with the surrounding environment, there will be greater freedom of choice to manipulate or not unnecessarily be manipulated by the environment. It is not only the actual resources that are of importance, however, but also how these resources are perceived. Of course, the perceived resources are to some degree related to the actual resources but there will often be disagreement. The actual and perceived resources together will have an impact on different feelings and behaviour in an interplay with the surrounding environment.

Although aging has always been a part of human life, scientific inquiries in the area began relatively recently. This is with few exceptions especially true of the field of social psychological gerontology. According to Birren (1959) the beginning of any real expansion in gerontology could not be dated earlier than 1945.

Baltes (1979) discusses some early exceptions. He is impressed by the comprehensiveness, methodological insights and life-span approach that, for example, Quetelet (1842) showed already at that early time. But Baltes also notes that many of these early insights were forgotten in the psychology and social psychology of the early 20th century. The paradigm of that time had a tendency towards the positivistic, experimental, and reductionistic direction.

Social gerontology has in Sweden and elsewhere, been a rather descriptive, atheoretical matter. The explanations, when tried, have almost always been role-theoretical. Within the role-theoretical frame, the conditions for successful aging have been of major interest in social gerontology. Successful aging is difficult to define and Birren (1964) describes the concept as elusive. The elusiveness is partly explained by the normative element in the used definitions and operationalizations (Tornstam, 1978). The normative element is evident whether the definitions are based on the perceptions of the respondent himself, some external standard or on a mixture of both approaches. Britton (1963) understood successful aging as a social psychological process of adjustment, inferred partly from external aspects such as activity, social participation and interaction and partly from inner aspects such as more personal and private behaviour. He defined the well-adjusted person as:

> *"one who is living a life which is reasonably satisfactory to himself and which meets the expectations of society"*
>
> (Britton, 1963, p 61)

Thus, as Britton sees it, activity and social participation are two factors which meet the expectations of society and are, together with a feeling of life satisfaction, dimensions in this normative adaptation.

There is empirical support for the position that satisfaction with one's personal resources (Medley, 1976, Elwell & Maltbie-Crannell, 1981) is a main determiner of life satisfaction. Medley (op. cit.) shows that "Satisfaction with life as a whole" among persons 65 and older was dependent upon satisfaction with family life as well as satisfaction with standard of living and health satisfaction. Elwell and Maltbie-Crannell (1981) showed life satisfaction among persons 50 years of age and older to be determined by, among other factors, subjective health and self-reported income together with social support reflected through socializing with neighbours and friends, with family and through stated participation in formally organized groups. Although these authors are using a role-theoretical approach (Elwell and Maltbie-Crannell, for example, use role loss as a personal characteristic), they are evidently gliding towards the resource theoretical position.

In this thesis I will suggest a complete change in the point of departure from the role-theoretical to a resource-theoretical approach. As I am still interested in successful aging, or normative adaptation, I will use activity level, loneliness and life satisfaction as exemplifications of important domains of normative adaptation and as dependent variables. They will be dependent on access to resources and how these resources are perceived. Thus, resources will be the superior concept and this monograph will describe an outline for an alternative way of explaining some variables of interest in the field of social psychological gerontology.

Chapter III.

SOCIAL PSYCHOLOGICAL GERONTOLOGY - AN OVERVIEW

III.1. The concepts of age, period and cohort

Much gerontological research could be characterized as using a reductionistic approach. This is perhaps especially true for basal biological gerontology and psychological gerontology, but the characterization also holds true for a large part of social gerontology. The growing interest in the life-span developmental approach, seen as an antithesis to the reductionistic ideal, has pointed to the necessity of a broader multidisciplinary, multifocal approach to development (Baltes, 1979).

Riegel (1975) recognizes four major "planes of developmental progression". He labels these planes "inner-biological", "individual-psychological", "cultural-sociological" and "outer-physical". Birren & Schroots (1980) also discuss the multidimensionality of aging. At a certain point development turns into aging and the ontogenesis turns from "adulting" into "elderling" in the social setting and from "maturing" into "geronting" as to psychology. In the biological area "growing" turns into "seneceing". Riegel, as well as Birren, points to the complexity of the aging phenomena and consequently recommends a multifocal approach.

The multifocal approach will be even more complicated as aging is confounded with period and cohort effects at all levels of development. This problem has primarily attracted methodological interest. Socio-gerontological theory has not yet faced up to this challenge. The present situation has been summarized as follows:

> *"Investigators now understand, although they have not solved "the age/period/cohort problem". "*
>
> (Maddox & Campbell, 1985, p. 3)

As pointed out by Solem (1987), a good definition of gerontology should comprise old people (as individuals and as a group in society) as well as aging. The study of old people is fairly unproblematic as it does not have to consider "the age/period/cohort problem". Aging in the behavioural sciences is defined as:

> *"The regular behavioural changes that occur in mature genetically representative organisms living under representative environmental conditions as they advance in chronological age".*
>
> (Birren & Renner, 1977, p. 4)

From this definition, it is clear that aging is a process during which "they advance in chronological age". This does not necessarily imply circularity as aging is something more and other than the mere passing of chronological time. Further the definition states that behavioural aging concerns "regular behavioural changes" which happen after maturity. This raises some problems. The definition actually implies that maturity has distinction in time and points to a process that traditionally is at focus in the biological development. It could be more clearly stated in the definition that there will be different "after maturational" times for different functions.

After maturity has to be understood as a hypothetical construct, some sort of common denominator for the development of a number of phenomena. Some phenomena will develop early and slowly regress through life. Others will increase through life. The development could be summarized as in Figure 1. Of traditional interest to gerontologists has been the development between points C and D in the figure. Only recently has interest expanded to include studies on the right hand side of point D in the Figure.

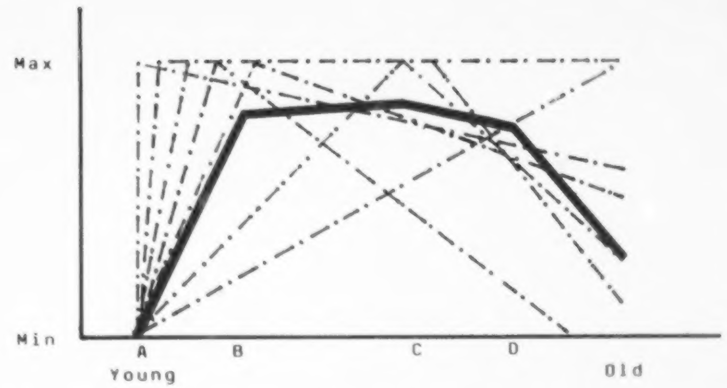


Figure 1. Human development as a sum of the development in a number of phenomena. The figure can be seen as an exemplification of resource development by an individual during his or her life-span as well as an example of a cross-sectional comparison of access to resources in different age-cohorts.

Comparisons of different phenomena in different age-groups have constantly been of interest. It could be discussed whether "after maturity" means what happens to the right of point B in the figure, that is, after the rapid growth in early years or what happens to the right of point C where the summarized curve is beginning to decline.

Finally, the definition points to an interplay of genetic and environmental factors which are important in aging. This again draws attention to the complex nature of aging and to the confounding with period and cohort on whatever "plane", in the terminology of Riegel (1975), the analysis in done.

Johansson (1976) suggests a rough distinction between genuine and non-genuine aging. Genuine aging refers to the basic biological development characterized by irreversability while non-genuine aging represents environmental influences that could be either reversable or irreversable.

Some problems concerning the concepts of period and cohort are discussed by Riley (1976) in terms of age strata in social systems. In highly differentiated societies more strata could be distinguished. These strata are seen as contemporary living cohorts. The model implies that the different cohorts experience important life-events in different historical periods as they age.

At a certain point of measurement you capture the different cohorts as different age-strata in the population.

The concept of cohort is sometimes not clearly distinguished from the concept of generation. Bengtson et al (1985) suggest a simple and empirically pragmatic distinction between age-cohorts and generations defining age-cohorts as:

> *"An aggregate of individuals born within the same time interval (usually five or ten years)"*.
>
> (Bengtson et al, 1985, p. 306).

and reserving the concept of generation for a family lineage approach. A similar distinction is made by Carlsson & Karlsson (1970).

People are grouped together in a cohort by demographic and historical age-specific attributes. As a group, persons born during a given period of history are thought to experience the consequences of historical events in a similar way. The concept of cohort then becomes intimately tied to the period concept. It will be very difficult to decide whether a person behaves in a certain way because he belongs to a certain birth-cohort and the thoughts thus represent the long-standing beliefs of persons sharing some common history or whether the behaviour is an effect of a certain number of years of aging. It will also be difficult to sort out the effect of time, or where in a period of life a cohort is, when the measurements are done, from the effects of aging.

Bengtson et al (1985) write:

> *"In short, the assessment of differences between individuals who differ by age must consider a maturational or developmental aging hypothesis, a generational or cohort hypothesis and finally a contemporary events or period hypothesis"*.
>
> (Bengtson et al, 1985, p. 308)

It remains uncertain what is meant by period or time effects. In more reasoning articles (e.g. Rosow, 1978; Bengtson et al, 1985), the period effect implies the historical events a cohort have faced as time passes i.e. in aging. In more technical articles (e.g. Rodgers, 1982; Glenn, 1976; Palmore, 1978; Schaie, 1965), the period effect seems to refer to the time of measurement only. This leads not only to confusion but also to rather different answers as to the possibility of isolating the different effects. Scepticism is expressed by, for example, Glenn (1976), Adam (1978) and Rodgers (1982). The possibilities are enhanced by, for example, Mason et al (1976) and Smith et al (1982). Palmore (1978) is optimistic about the possibilities of disentangling age, period and cohort effects under certain circumstances. There seems to be general agreement that there is a need for evidence outside the model to sort out what effects cause what (i.e. Rodgers, 1982; Mason et al, 1976; Palmore, 1978). Another problem is that the period effect has to be defined as an effect of times of measurement. If the period effect is seen as the historical events happening to some cohorts as they age and is kept apart from time of measurement we are back to the standpoint taken by Baltes and Nesselroade (1970) when they concluded that no solution was at hand.

Perhaps it would be clearer to talk about four different interacting effects, i.e. not only (1) aging in a (2) cohort that have faced certain (3) historical events but also (4) time of measurement. This will of course have implications for the possibilities of isolating the different effects methodologically. It is not that clear to me, to paraphrase Maddox & Campbell (1985), that we yet understand fully the age/period/cohort problem.

III.2. Some methodological approaches

The field of gerontology has made contributions to methodological development in the behavioural sciences. Some methodological sophistication has been necessary as the problem of pinpointing changes due to aging is difficult as the changes are influenced by cohort and period effects. The confoundedness of the variables of interest has led to a preference for longitudinal and sequential approaches over the still predominant cross-sectional approach.

III.2.1. Cross-sectional design

The empirical study to be reported in this monograph, like the overwhelming majority of gerontological studies, is cross-sectional. This means that data is collected from persons different in age at a particular time of measurement. The great advantage in cross-sectional studies is that this type of investigation is easily done, fast and inexpensive. The flaw in the method is that the conclusions to be drawn from this type of study have to be restricted to differences between age-groups. Of course, change is in some way interwoven in gerontology as a research field. Aging, if of interest, implies change in at least some respects. The change per se cannot be studied within the cross-sectional design except on rare occasions. For example, widows and widowers have ceased to have married status and those who have married are no longer unmarried.

This means that it will be possible to infer some change even from cross-sectional data although it will not be a major point here. The cross-sectional study gives a momentary picture of a situation at a particular time of measurement. It gives an impression of a more or less haphazard section of reality. This problem is, however, not exclusive to the cross-sectional design.

It is, of course, possible to compare persons of different ages at a certain time and establish differences and similarities at the time of measurement without going into deeper detail on the origin of these differences and similarities. That is, it is possible to compare age-groups without saying anything about, for example, aging. People born in a certain age-cohort, aged a certain number of years, having lived through a certain historical period, measured at a certain time, still show similarities to and differences from other age-cohorts at the same time of measurement and this is of interest in its own right. It could even be that trying to isolate one of the possible effects, obscures the fact that all effects work together in a more or less complicated interaction. A hypothesis of multiple effects has had some support in, for example, research on voting behaviour in USA, summarized by Bengtson et al (1985).

The methodological sophistication in gerontology mentioned earlier can not be exemplified by the cross-sectional design, but this type of investigation nevertheless dominates the field. As some of these investigations are now relatively old and new ones are frequently presented, it will finally perhaps be possible to make some statements about changes based on cross-sectional designs with a "quasi-sequential" approach. In a "quasi-sequential" approach, some performance in different age-cohorts is compared at different times, in different studies. An example could be reaction time, shown to be longer among 70-year-olds compared to 20-year-olds in different cross-sectional studies from 1899 onwards (Welford, 1977).

III.2.2. Longitudinal design

The major alternative to the cross-sectional design has traditionally been the longitudinal study. In the longitudinal study, a group of persons of, for example, the same age, is studied at at least two different times of measurement. The great advantage of the longitudinal study is that it creates possibilities for noticing change in the studied group. Repeated measurement in the same population is actually the only available method of studying intrapersonal change. The interpretation of this change is another matter, however.

The longitudinal design generates knowledge about how a group of persons change but actually gives no clue as to what caused this change. The changes are often at least implicitly seen as aging effects but, as has often been discussed lately, this conclusion is often premature as it is just as impossible to control for period and cohort effects with this design as with the cross-sectional. The longitudinal study also has some practical problems as it is time-consuming. To study development and change in a, let us say, 70-year-old cohort to the last survivor would take at least 20 years, often longer. In addition to this comes the well-known problems with repeated measurements and selective drop-out from the study. Thus, although there are advantages with the longitudinal design compared to the cross-sectional, it is obvious that many problems still remain.

III.2.3. Sequential design

The solution offered to the problem of the confounded data regarding age, period and cohort effects has been the sequential design. This design was introduced in the mid 60's (Schaie, 1965) and immediately attracted a great deal of interest among methodologists in this developmental field. The design was recognized as a promising possibility to sort out the three mentioned major effects in change and development. Maddox and Campbell (1985) see the design as a major contribution by gerontology to the social sciences as a whole.

Schaie (1965) points out that a complete model of developmental change requires considerations of age, time as well as cohort effects. The new model was the General Developmental Model he presented when he recommended a design with repeated measurement of independent samples from a span of cohorts. This would give a possibility of conducting cohort-sequential, time-sequential and cross-sequential analyses and ultimately a possibility to sort out the relative impact of the different effects. This could be done in most circumstances. Schaie notes the exception when age, time and cohort effects are simultaneously at hand.

Schaie's General Developmental Model has given rise to some controversy. Baltes (1968) points out the fact that the independent samples used in the sequential design create the opportunity only to establish mean differences between ages, times of measurement and cohorts. The intra-individual changes would in this design be impossible to study. Baltes (1968) recommends that a cross-sectional study be repeated longitudinally to ensure the possibilities of also analysing intra-individual change. This so-called Schaie-Baltes controversy was in some respects solved when the authors (Schaie & Baltes, 1975) agreed that the sequential approach of Schaie could be of special value in explanatory investigations, while the cross-sectional longitudinal approach of Baltes had special value in descriptive studies. As a general model Baltes cross-sectional longitudinal one was recommended as it provides scope for all interpretations although the strength in this approach is in some respects less than that of the original General Developmental Model proposed by Schaie.

It seems however fair to state that some controversy remains concerning the age, period and cohort problem and that still more work has to be done before this problem is finally solved, if it ever can be. This intense methodological interest has cost time and effort however and perhaps Rosow (1978) is right when he states:

> "*But in the larger economy of any field the division of labour is a zero-sum game. Every hour devoted to methodological refinement is an hour withdrawn from theory; ... Scarce resources must be allocated, and the choice among alternatives now does approximate a zero-sum game in which methods predominate over theory*".
>
> (Rosow, 1978, p. 65-66)

III.3. Some socio-gerontological models or theories

Socio-gerontological theory often does not offer possibilities of understanding the multidimensionality in development that has attracted such interest in the methodological area. Many social psychological approaches have been used to describe aging but here I will touch upon just a few. The different approaches mentioned can be divided into role-theories and resource-theories. Aging can thus be described in terms of roles being built, kept or broken down or aging can be described in terms of access to resources, more or less objectively measured, throughout the life-span. It is obvious that the role-theoretical tradition is by far the most elaborated in social gerontology.

III.3.1. Role-theories

The role-theories I have chosen to mention are symbolic interaction theory, activity theory, disengagement theory and the social breakdown syndrome. These theories have, often implicitly, influenced much research within the social psychology of aging.

III.3.1.1. The symbolic interaction theory

In the first years of the 20th century symbolic interaction theory was introduced (Cooley, 1902). According to Cooley, human behaviour is basically a function of the expectations of surrounding people. These thoughts were elaborated, mainly in the 20's and 30's, by another American social psychologist (Mead, 1956).

Although the interaction theory has not explicitly generated much sociogerontological research, I will discuss the theory for three different reasons. (Some important exceptions are worth noting. Ryder (1965) is obviously leaning towards the symbolic interaction theory and Kimmel (1974) has made a more elaborate interpretation of aging based on it). First, the theory is interesting in its own right and can shed some light also on the social psychological situation of the aged. Second, the theory has implicitly influenced much social psychological research on age and aging. Third, there are interaction theoretical arguments behind the other role-theories I will discuss in this section. This will be especially obvious in the model that describes aging as a social breakdown syndrome.

The main thought in symbolic interaction theory is the postulate that interaction between people is fundamental to human development. Self perception and consciousness is developed together with other people. One of the most important constructs is thus that the picture of oneself emanates from surrounding people. Self perception is built through what is reflected back from interaction partners. A person will look at himself as he thinks other people look at him. This reflected self perception is also called the looking-glass self. This looking-glass self is not as effectively reflected in some interaction partners as in others. People who are more important to us are called significant others. These could be parents first and later on, for example, brothers or sisters and playmates or schoolmates. To a grown-up, a wife or a husband is a typical significant other but so are the children, and often relatives and friends and workmates.

According to the interaction theory you are in no way completely in the hands of your interaction partners but will look for interaction partners who will reflect the self that is mainly in harmony with an earlier reflected self perception or looking-glass self. This makes for part of the dynamics of the theory. At the same time as you are depending on your interaction partners to have your looking-glass self confirmed you can choose interaction partners who will confirm your looking-glass self.

In aging you lose significant others and it will be more and more difficult to keep up the earlier looking-glass self characterized by a certain individuality. The self-image and the role-taking will be more influenced by the general attitudes; i.e., the generalized other. The looking-glass self built up from reflections in the generalized other will be more restricted and will under no circumstances be able to reflect a self-image characterized by individuality. This will lead to an increasing risk of older people getting caught in a restricted and stereotyped role as the dependence on the generalized other increases.

III.3.1.2. The disengagement theory

When the disengagement theory was formulated in the 1960's (Cumming & Henry, 1961), it was clearly in contrast to the predominant tradition. Previously it had been argued that it was important to be as active as possible if life was to be as positive as possible in aging. The disengagement theory, on the other hand, states that aging generally means a decline in ability at the prospect of an inevitable approaching death. In this situation the interaction between the aging person and persons around him will decline. As the interaction creates and confirms the roles, reduced interaction will, according to the disengagement theory, cause reduced control of the persons you are interacting with. This is to say that if the process has started, it is as a principle self-generating.

If the individual is ready for disengagement but society isn't, there will be a dysfunction in the system but the individual will as a rule keep his engagement. If, on the other hand, society is ready for disengagement when the individual is not, the individual will, as a rule, disengage. Society is thus the stronger party. If society disengages a person before he is ready for disengagement, life satisfaction or morale could be negatively influenced. Further, an individual disengaged by society before he is ready can engage in an alternative sphere. When both the individual and society are ready for mutual disengagement, complete disengagement will take place.

According to the disengagement theory, aging is characterized by the loss of central roles. This will lead to a shrinking life-sphere, and to crisis and declining life satisfaction if you don't accept the disengaged role. Finally the disengagement theory states that disengagement is a general human phenomenon although it will be expressed in different ways in different cultures. The disengagement theory has later been revised by Cumming (1963) as well as Henry (1964), but the main feature, that disengagement and aging go together, has remained.

The disengagement theory has been heavily criticized (e.g. Maddox & Campbell, 1985; Hochschild, 1975). The criticism is hardest on the claim that disengagement is universal, inevitable and intrinsic phenomenon. Hochschild (op cit) states that her greatest problem with the theory concerns its unfalsifiability. Maddox and Campbell (1985) state that they find it even worse that:

> *"the theory tended towards biological reductionism"*
> (Maddox & Campbell, 1985, p 5).

Earlier Maddox (1969) had summarized the importance of the disengagement theory:

> *"... (it) has been found wanting empirically and its original formulation is rarely defended by anyone including its original proponents".*
> (Maddox, 1969, p 13).

Criticism may have been so vigorous also because the theory is negative to action on the part of people working with the elderly. Persons engaged in the care of the elderly need incentives for action but the disengagement theory has been interpreted as meaning that doing nothing is what will in the last analysis benefit the aged most. Thus, it is argued, through activating the disengaging older person, relatives and personnel will only cause problems, as this delays the inevitable disengagement and will influence morale negatively. Gerontologists and people caring for old people need something positive to do. The answer has been activity.

III.3.1.3. The activity theory

Unlike the disengagement theory, the activity theory argues that optimal aging is characterized by keeping the activity level high. Further, the theory states that most of the engagement depends upon earlier life-style and socio-economic situation rather than any intrinsic, inevitable process leading to disengagement from society.

Activity theory has implicitly influenced much socio-gerontological research. It was, however, not until the beginning of the 70's that the theory was explicitly tested (Lemon et al, 1972). Among the hypotheses tested, it was shown that informal activity (with friends, relatives and neighbours) was directly associated with life satisfaction and that informal activity was more highly associated with life satisfaction than formal activity. The conclusion was however drawn that the formal testing

> *"provide surprisingly little support for the implicit activity theory which has served as the theoretical base for practice as well as research in gerontology for decades"*
>
> (Lemon et al, 1972, p 519).

Ten years later, activity theory was explicitly stated and tested for a second time (Longino & Kart, 1982). The same hypotheses were again supported; i.e., informal activity was directly associated with life satisfaction and informal activity was more highly associated with life satisfaction than formal activity. It was also shown that formal activity actually had a negative correlation with life satisfaction; the more engagement in formal activity the lower the life satisfaction. This finding clearly opposes the activity theory.

Actually the results fit well with the symbolic interaction theory. The results might be interpreted as follows: if significant others exist, you are engaged in informal activities with them and life satisfaction is high perhaps because you retain a positive image of yourself. If, on the other hand, you are predominantly engaged in formal activities, you interact a great deal with the generalized other. That is to say you will have problems with your self-image and life satisfaction could be negatively affected.

III.3.1.4. The social breakdown syndrome

Aging as a social breakdown syndrome was suggested by Kuypers and Bengtson (1973). The model has not yet generated empirical studies but is very pedagogical. It illustrates how surrounding people can influence the self-image in aging. At the same time the model is an illustration of the symbolic interaction theory as it is based on how a person lacking significant others is dependent on the generalized other to reflect the looking-glass self.

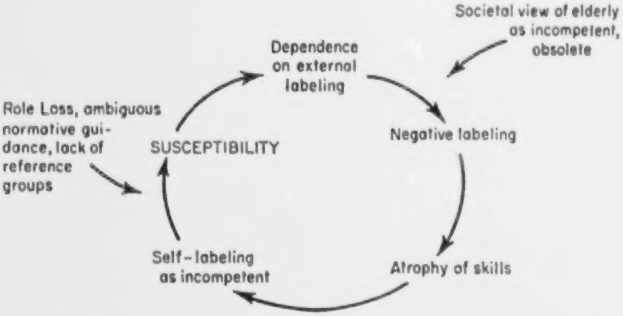

Societal view of elderly as incompetent, obsolete
Dependence on external labeling
Role Loss, ambiguous normative guidance, lack of reference groups
SUSCEPTIBILITY
Negative labeling
Self-labeling as incompetent
Atrophy of skills

Figure 2. The social breakdown syndrome. (Human Development: 16, 1973, p. 190)

The basic assumption is that aging is characterized by role loss, ambiguous norms and lack of reference-groups. The social breakdown syndrome becomes a breakdown syndrome because the general attitudes in society are negative to aging and the elderly. If the attitudes in society were not negative, the self-image built from surrounding people would not have become negative.

When you experience role-loss and ambiguous normative guidance with simultaneous lack of reference-groups, your dependency on people around you for defining your self-image will increase. You will be dependent on the external labeling. As societal values and the attitudes of surrounding people are negative, you will describe yourself negatively. With the negative labeling you will give up doing things you managed before and there will be a decline in knowledge and skill perhaps due to lack of training. So when you believe and notice that you don't manage things you could before, you build an image of yourself as a less competent person. This will lead to an increase in susceptibility, to a dependence on external labeling and so on in a vicious circle.

As the vast majority of surrounding people, including the aged themselves, share at least partly negative attitudes towards aging we will seldom or never meet an elderly person who has not done a few revolutions in the vicious circle. Thus, when we meet older people and notice behaviour supporting a negative attitude, it is impossible to sort out the impact of earlier

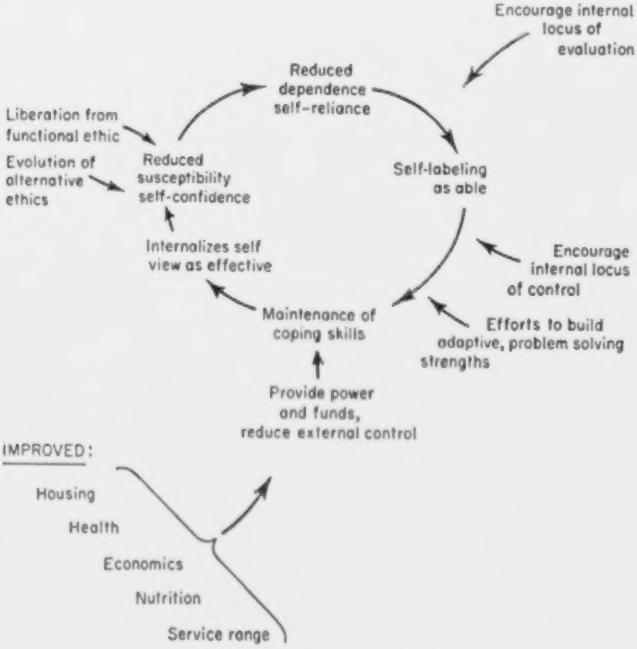

Encourage internal locus of evaluation
Reduced dependence self-reliance
Liberation from functional ethic
Evolution of alternative ethics
Reduced susceptibility self-confidence
Self-labeling as able
Internalizes self view as effective
Encourage internal locus of control
Maintenance of coping skills
Efforts to build adaptive, problem solving strengths
Provide power and funds, reduce external control
IMPROVED:
Housing
Health
Economics
Nutrition
Service range

Figure 3. The social reconstruction syndrome. (Human Development: 16, 1973, p. 197.)

negative attitudes on this behaviour. It is perfectly reasonable to think that behaviour we see as typical for the aged is to a certain but unknown degree caused by the surrounding society. In societies with other values and attitudes to aging, the behaviour among the aged could be quite different. This could be interpreted as an implication of period and cohort effects.

Kuypers and Bengtson (op cit) also describe a social reconstruction syndrome. The reconstruction syndrome shows how to maintain competence in aging. This is to a large extent based on increasing the access to resources among the aged. This idea provides a smooth passage to the chapter about resource theories in social gerontology. How the model might work can be seen from the figure above. Health, dwelling and finances are resources that are thought to have special importance for the elderly.

If a dwelling is adapted to meet the demand for good functioning it will also facilitate independence. The same holds if health is improved. Improved financial resources that provide a good standard of living will also be very important for independence.

The model heavily stresses the importance of work and work ethics, perhaps even a bit too much for Swedish standards at least, and Kuypers & Bengtson would like to see the importance of the transition to a position as retiree played down. The loss of the work role would be easier to bear if valued alternative roles were already developed.

Thus the reconstruction syndrome is based on an allocation of resources to increase independence at the same time as the transition to non-working status is made more gentle through a change of work ethics and through alternative positive roles.

This would lead to a conservation of knowledge and skill and a self-image of efficiency and competence. Self-confidence would increase and susceptibility to external labeling would decrease. The elderly would have a feeling of internal locus of control, they would label themselves as competent and a beneficial pattern would be established. Thus it is possible to think of an interplay between the aged and the surrounding society and people leading to a positive, rather than negative, self-image.

In a narrow sense, the social breakdown as well as the social reconstruction syndrome point to the importance of the social context in which aging takes place. This contextualism is further elaborated by Riegel (1975), when discussing the possibilities of interpreting human development in terms of a dialectic interplay between the individual and the surrounding environment.

III.3.2. Resource theories

There is a problem with role-theories in their lack of exactness. It will always be open to debate how and why (perhaps even if) people are changed by the roles they perform during their life-span. It is difficult to measure roles and role content unambiguously. It is impossible to conceptionalize free-floating roles. Actually when a role-theory approach is taken role play in itself is seldom discussed, but taken for granted on the basis of some change. Of importance to changes in roles is the access to actual resources and often how these resources are perceived.

This and the perhaps too heavy emphasis on activity or engagement level, has led to some try-outs of alternative theoretical approaches in social gerontology. In this chapter, I will briefly discuss an application of the exchange theory to social gerontology. The exchange theory, originally an economic theory, is a balance theory describing inter-human relations in terms of the possibilities of giving as much value in social interaction as you receive. Further, I will discuss a simple resource theory on aging tied to a so-called personality theory of short range. Such a personality theory will not describe the personality in its entirety but concentrate on some main features.

The resource concept will be further elaborated in chapter IV. I will here give just a tentative definition of a resource as any asset you can use in a certain situation. In the exchange theory, you must be able to bring some resources to the interaction to be of interest as an interaction partner. In the simple resource theory presented in chapter III.3.2.2., resources are crucial to the feeling of control over what happens to you.

III.3.2.1. The exchange theory in social gerontology

Exchange theory can be based on resources (Emerson, 1976). With their help you can keep the interpersonal exchange situation in balance. Exchange theory states that you are interesting as an exchange partner to the extent that you have resources and that people strive to keep the exchange relation balanced through giving as much social interaction as they are receiving. Thus people who mutually have something to give each other tend to build relations that last at least as long as the exchange relation remains. If the relation becomes unbalanced but still remains the relation can be characterized in terms of power and dependence. The person with comparatively more resources will have a position of power relative to the person with comparatively less resources, who will be in a dependent position. The power can be used to ensure further advantages as an interaction partner, which will increase the dependence of the comparatively weaker one, and so on.

Dowd (1975) has shown some possibilities of the exchange theory in social gerontology. The basic assumption is that resources decrease with increasing age. The resources are here seen as an united construct and are not divided into different categories. When the resources decrease you will be less interesting as an interaction partner. To balance the exchange, the aged can use one or more of four balancing operations according to Dowd (op. cit). These are;

a) withdrawal,
b) extension of the power network,
c) the emergence of status
d) coalition formation.

Through withdrawal the dependent tries to balance the relation simply through reducing the social interaction with the powerful. If the dependent doesn't interact with the powerful, his power will not increase and neither will the dependence of the dependent. The second balancing operation works through an extension of alternative spheres of interest. The dependent person will engage in some area of interest to the powerful. This will bring two advantages. First, the power of the powerful is reduced as the dependent devotes himself to something other than interaction with the powerful. Secondly, the dependent will have something of interest to exchange with the powerful. For one or both of these reasons the exchange is balanced. The third balancing operation is at work when the powerful "revaluates" what the dependent can give in an interaction. A younger person with more resources can, for example, claim that the interaction with the dependent elderly gives an opportunity to understand himself in a historical perspective, understand political events, material striving, the home district or whatever. By forming a coalition two or more dependents combine against the powerful. The powerful person will, because of the coalition formation, be denied alternative possibilities to achieve his goals.

Dowd notices the resemblance of the first balancing operation to the disengagement theory and the resemblance of the second to a reaction according to the activity theory. If none of the four balancing operations can be used, and Dowd states that this is true for most elderly people, there is no alternative except to continue the exchange from a position of underdog. The older will be dependent on the younger and have to give compliance and/or gratitude in the exchange situation.

Some restrictions regarding the theory have to be mentioned. First, the theory hasn't been empirically used in social gerontology. Thus it not yet possible to evaluate what this approach can yield in this area. Second, it is according to Dowd not possible to predict which balancing operation a certain person will use in a certain situation, which will of course reduce the predictive value of the theory. Third, it is difficult to explain sheer altruism within the borders of the theory, and this will be problematic to the extent you think sheer altruism exists.

III.3.2.2. Earlier presented resource approaches in social gerontology

A resource approach has sometimes been suggested in social gerontology. Palmore et al (1979) for example discuss stress and adaptation as a reflection of access to health resources, psychological resources and social resources. Caspi and Elder (1986) discuss life satisfaction in terms of access to resources and past stressful events. However, none of the authors puts the resource reasoning together into a cohesive model.

Two gerontologists (Solem & Traeldal, 1970; Solem, 1972; Traeldal, 1972) have developed an outline for a resource theory in social gerontology. They recognize three different resource categories;

1) organismic
2) interpersonal
3) institutional.

The organismic resource category comprises intelligence, knowledge, physical strength, health and personality. The interpersonal resources category consists of the social network. A person who can reward or punish the behaviour of more people around him, will have more interpersonal resources than a person who can reward or punish fewer. The institutional resources can be exemplified by status and socioeconomic position.

The basic assumption is that increasing age will lead to decreasing resources in the three resource categories. It is more common for older persons, compared to younger ones, to have health problems and their physical strength will usually be reduced. The power to reward or to punish, for example the behaviour of one's children will be greatest when they are young. When they leave home and form a family of their own, the power of the parents to reward or punish their behaviour will decrease. If you confine yourself to measuring the social network and assume this will reflect the interpersonal resources sufficiently well, you must allow for the fact that the social network is usually reduced in aging. The institutional resources are reduced as the pensions are normally lower than the earlier salary. In all positions the status ascribed to the retired person is lower than that ascribed to the working person.

The authors (Solem & Traeldal, 1970) link this discussion with the locus of control concept by Rotter (1954) as a personality theory of short range. Solem & Traeldal (op. cit) argue that with diminishing resources in old age people will slowly approach the external pole in the external - internal continuum. Although the personality dimension is relatively stable we continue to learn throughout life. As resources decline the environment will become increasingly difficult to control and this will lead to a reduction in the expectancy of internal locus of control (Solem, 1974). In a cross-sectional study, it is shown that the elderly have more of a tendency toward external locus of control than do younger people, (Solem & Traeldal, 1970, Solem , 1974).

Whether there is a tendency towards higher externality in advancing age as suggested by Kuypers and Bengtson (1973) and shown by, for example, Solem and Traeldal (1970) is questioned by Kausler (1982). He refers to investigations showing increased externality, no differences, as well as decreased externality in older age-groups. From this, he concludes that the best estimate is relatively little change in locus of control over the adult life-span. This is further elucidated by Lachman (1986). She notices the blurred picture and agrees with Kausler concerning a generalized locus of control but shows externality to increase in domain-specific locus of control tied to intelligence and health.

Chapter IV.

TOWARDS A COHERENT RESOURCE MODEL IN GERONTOLOGY

IV.1. A tentative theoretical resource model

In this chapter a tentative theoretical resource model is presented. To facilitate the reading of the chapter the tentative theoretical resource model is visualized in Figure 4. The components and the relation between them are discussed throughout the chapter. The boxes show the unities used in the model. These are three categories of actual resources namely individual, interpersonal and institutional resources. The actual resources are reflected to a certain extent in the perceived resources partly mediated through some form of self-reference system. Together this will be reflected in feelings and behaviours, all in constant interplay with the surrounding social and physical environment. The main direction in the figure is from top to bottom, but feed-back loops are possible on all levels. The perspective lines from past to present emphasize that the present is related to an earlier situation in every unity.

A coherent model based on resources has the advantage of giving a frame or reference to empirical studies that goes beyond sheer description. When a certain field is studied, the used variables probably have to be qualified, but the structure of the model could still be visible. This has the advantage of permitting different dependent variables to be studied within a single frame of reference. The multidimensionality and contextuality of the model make it possible to use it in many different studies. In applied policy studies, for example, it will be possible to show on what level different actions are taken; are resources increased, are environmental demands decreased or is the perception of access to resources manipulated?

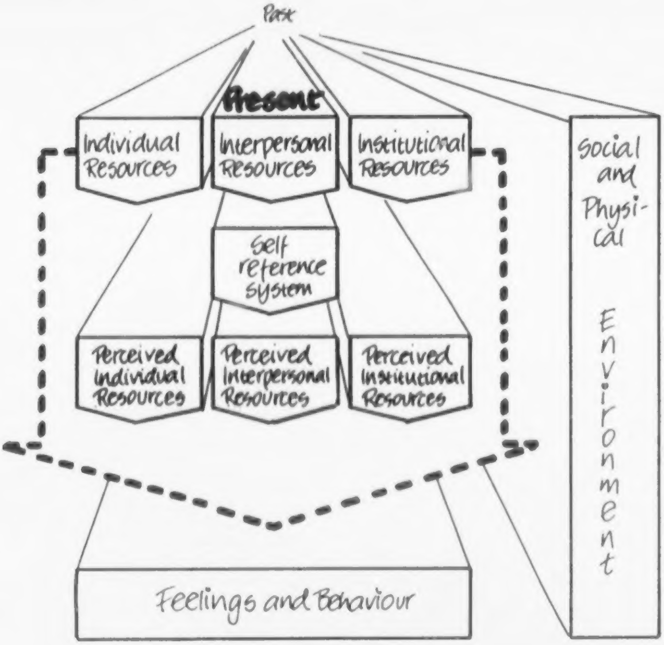

Past
Present
Individual Resources
Interpersonal Resources
Institutional Resources
Self reference system
Perceived Individual Resources
Perceived Interpersonal Resources
Perceived Institutional Resources
Feelings and Behaviour
Social and Physical Environment

Figure 4. A tentative theoretical resource model.

IV.2. The concept of resource

From economics not only the concept of resources has attracted interest in the behavioural sciences but also the concept of exchange. In the exchange theoretical tradition or within the exchange frame of reference as Emerson (1976) prefers to call it, there has been an attempt to circumvent the concept of need in the use of the concept of resources, although this purpose is not explicitly stated. Likewise, the concept of resources has been attractive to welfare research as a way to get around the concept of need. In welfare research, however, this endeavour is often explicitly stated.

Exchange theory as a model in behavioural sciences is primarily linked with work by Homans (1958), Blau (1964) and Emerson (1972, 1976) although the tendency to understand human interaction and communication in terms of exchange has a very long tradition. Neither Homans (1958), nor Blau (1964) explicitly link exchange theory with resource reasoning in a strict sense. Homans (1958) states that exchange takes place between people who can mutually reward each other, but the source of the reward is not explicitly stated as a resource. Blau (1964), on the other hand, does talk about resources explicitly when he discusses power and dependencies in the exchange situation. He, however, uses the concept inter-mingled with the concept of need in a way that makes it difficult to see the exchange theory also in his terms as a resource approach.

It was Emerson (1972, referred to 1976) who formally stated the resource approach in exchange theory when he suggested the expression Ax_i; By_j as a notation for exchange relations. In the expression, A and B stand for actors (persons or groups) and x_i and y_j for resources used in the exchange situation by A and B respectively. Emerson (op cit) take Homans (1958) as the starting point in understanding x_i as an operant behaviour on A's part:

> "*which means nothing more than the defining fact that its continued performance is contingent upon (at least occasionally)* y_j *from B, which is, simultaneously, the defining fact establishing* y_j *as a reinforcer or reward for A*"
>
> (Emerson, p. 347, 1976)

It is obvious from this reasoning that Emerson (op cit) does not give much help in sorting out what kind of resources are used. Everything that is reinforcing in the exchange situation is a reflection of the resources brought into the exchange situation. There is obviously a circularity in this reasoning as long as resources are not defined by other means than their reinforcing power, of which Emerson (op cit) seems well aware.

Tornstam (1982) has made an extensive analysis of the resource concept and its usefulness in gerontology. He defines a resource as a

> "*material, personal or spiritual phenomenon, that is known and that you can and want to use to achieve societal or individual goals*".
>
> (Tornstam, op cit, p. 60, my translation)

He is pointing out the relative character of the concept. According to the definition, a phenomenon becomes a resource only if you know it exists and know how to use it. Not only this, but you must want to use it and perhaps it even has to be profitable. Tornstam (op. cit.) concludes that resources are not only dependent upon knowledge and goals in a certain society but also on the value structure of that society. This is in agreement with Svensson (1984) discussing resources as competence and pointing out that covert competence may become overt if and when the value structure in the environment is changed in a permitting direction.

As previously mentioned, resources have been used in welfare research as a measurement of levels of living in an attempt to avoid the concept of need. The resources used as indicators of levels of living or welfare are partly normative as Tornstam (1982) points out and implicitly or explicitly seen as prerequisites for quality in life. There is an on-going discussion in the field of welfare research, at least in the Scandinavian countries, about the possibilities and the advantages of deducing quality of life aspects from welfare indicators (eg Allardt, 1975, Eriksson, 1977, Johansson, 1977, Tornstam, 1982).

The resource approach in the definition of levels of living was discussed by the UN (1954, 1961) and further elaborated in an extensive Swedish investigation (Johansson, 1970). This investigation was characterized by less stress on possessing consumer goods and, in homage to Titmus (1958), defining level of living rather as access to resources of different kinds through which the individual can control and consciously direct the conditions of life. The components for the analysis of level of living in the Swedish so-called "low-income investigation" were:

1. Health
2. Nutritional habits
3. Housing conditions
4. Family background and family relations
5. Education
6. Occupation and working conditions
7. Financial resources
8. Political resources
9. Leisure and recreation

(Johansson 1970, p. 32-36, my translation)

These components have been criticized for having a "materialistic" bias. Allardt (1975) distinguishes three dimensions of welfare in his monograph on "Having, Loving, Being". He criticizes the Swedish investigation primarily for its concentration on the "Having" dimension. Allard (op. cit.) defines "Having" in terms of the satisfaction of needs by resources the individuals have. "Loving" is defined as the satisfaction of needs in terms of how the individual relates to other people and "Being" as the satisfaction of needs in terms of what the individual is in relation to society.

Further Allardt (op cit) discusses the distinction between welfare and happiness and between level of living and quality of life. From these concepts he constructs a simple four-field property space:

	welfare	**happiness**
level of living	Needs where satisfaction is defined in terms of material resources	Subjective perceptions and experiencies of the material and other conditions of ± life
quality of life	Needs where satisfaction is defined in terms of relations to other people, society and nature	Subjective perceptions and experiencies of the relations to other people, society and nature

(Allardt, 1975, p. 23, my translation)

The distinction of interest here is first between welfare and happiness, that is, between the actual material or relational conditions and the perception of them. This distinction is generally accepted according to Johansson (1977), but the second distinction between level of living and quality of life is more problematic. Tornstam (1982) is, for example, not satisfied with quality of life being reserved for relations to other people, society and nature, whether objectively measured or subjectively perceived, but would rather see it used in a more common sense way, where its objective, subjective, material or relational aspects could be used to make the concept more precise. Johansson (1977) is dissatisfied with Allard's need approach concerning "Loving" and "Being" and states that the distinction between level of living and quality of life is unnecessary if relational concepts like family, friends and acquaintances are seen as resources as they very well could be. This also holds for membership of and activity in trade unions and political organizations.

Eriksson (1977) shows that Allard actually uses resource reasoning about social need by considering whether conditions for their satisfaction are met. For example, Allard takes marital status as an indicator of "Loving"

> *"without exploring whether the marriage is heaven or hell"*
> (Eriksson 1977, p. 302).

The advantage of using different categories of resources in for example a social psychological gerontological study, is the multifocal, multidimensional approach that goes with it. The kind of resource categories used is perhaps not the main question. Johansson (1976) has, for example, suggested five resource components of interest, namely; physical, psychological, social, economic and political. Palmore et al (1979) suggested three categories of resources: health resources, psychological resources and social resources. Solem and Traeldal (1970) in their resource model, briefly outlined in chapter III, distinguished between organismic, interpersonal and institutional resources. In later writings Solem (1976) has partly abandoned the original trichotomization and suggests that individual and environmental resources are sufficient. I will not press this matter any further but just conclude that in agreement with the original proposal of Solem and Traeldal (1970), the trichotomization by Allardt (1975), seen as resource categories as suggested by Eriksson (1977) and Johansson (1977), is used in the model presented in this thesis. Thus there will be an attempt to distinguish between individual, interpersonal and institutional resources.

The three categories of resources are seen as sufficient to give some width to the concept of resources and at the same time give the micro, mezzo and macro perspective some possibility of being considered simultaneously. This also means that a multidimensional approach will more or less automatically be taken and the multidisciplinary nature of human development will be enhanced.

IV.3. An outline of resource development

A brief outline of human development in terms of resource development should spread some light on the possibilities of seeing, and perhaps explaining, socio-gerontological phenomena, from this viewpoint.

The basic assumption is that the richer the resources the richer the possibilities of managing the surrounding social and physical environment. This would lead to greater freedom of choice in manipulating the surrounding environment or in protecting oneself against unnecessarily being manipulated by the environment.

In this outline, the trichotomization of resources earlier suggested is used. This is, of course, much a matter of taste and the possibilities for alternatives remain open. Some categorization is probably necessary to handle the wealth of possible resources and a categorization also makes it possible to develop priorities in description and explanation. Individual resources will be defined as any internal assets an individual possesses. This will be a definition of covert internal resources in accordance with Svensson (1984). Overt individual resources that are of interest here will be defined as any internal assets an individual possesses and can use in a certain situation. The denotation would be concepts like measurement of health, strength, intelligence, creativity, knowledge, etc.

Interpersonal resources are defined in terms of the number of people in a person's social network. Although this is an oversimplified definition, it will probably often suffice. If there is special interest in studying certain aspects of interaction or quality in the network, the definition will have to be qualified. The denotation of the concept would be measurement of marital status, number of children (living at home), number of (close) friends or neighbours, etc.

The institutional resources would be defined in terms of position or power in society. The denotation would be measurement of social class, financial situation, work position, education, political involvement etc.

To cover every kind of resource in the different categories, or for that matter in any of the resource categories, is of course quite impossible as reality is hopelessly complex, but to cover some aspect in depth is, however, quite possible.

You are born in a social setting that could be characterized in terms of access to resources in relation to a surrounding environment. There will be a social network around you that you will immediately be a part of, although it is by no means yet yours, and that could be characterized in terms of interpersonal resources. People (i.e. the family, the parents, the mother) with given institutional resources and with given interpersonal resources also have access to some given individual resources.

Thus you are born in a social setting that could be characterized by resources of three different categories. You will have some latent resources of your own of an individual, interpersonal and institutional type. In the given social setting with the given social network the individual resources will develop in constant interplay with the surrounding environment.

In the normal case the institutional, interpersonal and individual resources of persons you depend on when you are born will be sufficient for you to develop the individual resources of your own. The individual resources are created through interplay with the resources of others. If the resources of the social network are richer, you will have greater possibilities of making your own individual resources grow. When the individual resources have reached a certain point interpersonal and institutional resources will develop. At first, these resource categories will be based on the given social network and given social situation but little by little the interpersonal and institutional resources outside the given social network and given social situation will develop in a constant and complex interplay with the individual resource development and with the surrounding environment.

It may be possible that early, as well as late in life the ontogenetic forces will be dominant even though they are dependent on the surrounding environment. It is likely that there will be some critical periods where individual resource development is especially rapid. It could be that if the resources of the persons around you do not meet a certain level your own resource development will be affected.

IV.4. Actual and perceived resources and the self-reference system

A main point in Allardt's (1975) reasoning is the necessity of keeping apart the objectively measured resources and the individual's perception of these resources. The perception of the resources probably provides more information about feelings or behaviour than the measured actual resources do. That is to say, the actual resources are not necessarily directly reflected in the individual perception of them. This is nothing new to Johansson (1977), has been empirically found by Allardt (1975) and commented on by Tornstam (1982) as a fact that has been well-known in gerontology for a fairly long time. Among others, Tornstam himself has shown this, comparing actual health and the perception of health in relation to "general satisfaction" (Tornstam, 1973, 1975).

Bengtson and Kuypers (1971) also observe the importance of the perceptions of differences (and similarities) as compared to actual measurable differences in a study of generation differences in attitudes and action between cohorts. Ahammer and Baltes (1972) argue that personality studies would gain if perceived age changes were measured in addition to actual age changes. In many cases the perceived age changes would say more about changes in behaviour than the actual age changes would, the authors conclude.

There seems to be general agreement that the perceived situation is of interest in many or most cases in addition to the actual situation. This obviously implies that there will often be discrepancies between the actual situation or the actual resources and the perception of them.

A number of explanations of the differences between actual and perceived resources can be offered. First, there may be difficulties in properly covering the same content in actual and perceived resources. This is not only a methodological and technical matter, although refined methodology certainly can reduce the problem as a source of error. Second, any measurement of actual resources and the perception of them will be mingled with history and time. There will be a cohort, history and aging effect in the development of the actual resources as well as in the perception of them. At the time of measurement

> *"the possibility of lagged response will obviously be something to bear in mind as soon as one starts relating variables to one another in theories of social structure and social change"*
>
> (Carlsson and Karlsson, p 716, 1970)

Third, there will be discrepancies between actual and perceived resources as a manifestation of the self-reference system of the person making the judgement. A tendency to exaggerate or underestimate as well as realistically evaluate actual resources could be a matter of personality. Personality development in old age has earlier often been discussed in terms of ontogenetic development or stage theories. Most well-known are perhaps the theories of Bühler (1962) and Erikson (1950). In a later tradition in life-span development the impact on personality of the surrounding environment has been pointed out (Riegel, 1975; Ahammer, 1973), not only in terms of changing assets but also in the perception of these (Ahammer & Baltes, 1972; Nardi, 1973). Personality is traditionally regarded as an intervening variable between events of life and the behaviour of the individual (Birren, 1964). In the theoretical model, personality is seen as an aspect of the self-reference system and as such an intervening variable between actual and perceived assets.

The notion of using some "personality" measurement as an intervening variable is further supported by the ideas of Hagberg (1987). He uses, among other concepts, personality as an intervening variable between life-changes due to decreases in resources and external and internal coping ultimately leading to life quality.

In addition to the methodological problem this also means that the personality that reflects the actual resources in the perceived, will be the same that reflects feelings and behaviour. Thus, conceptionally, compared to actual resources perceived resources will be closer to stated behaviour or stated feelings as they are both an expression of the perceiving person. This problem could be reduced by using different kinds of methods of observation to measure at least behaviour more objectively. Finally, the self-reference system could also be dependent upon aspiration level or adaptation to a certain situation or to a reference group, that is the self-reference system is related to the surrounding environment (Tornstam 1973).

To conclude then, the discrepancies between actual and perceived resources could be explained partly by measurement difficulties as actual and perceived resources reflect different qualities, and partly by the impact of what is here called the self-reference system. The self-reference system is in its turn thought of as reflecting the impact of earlier experiences, surrounding environment and/or personal style of answering. Thus, as an example, the perception of resources in old age could be in fluenced by knowledge or prejudices about what the resources of the old were like in earlier times. Second, some reference group in the surrounding environment could influence the perception of what is believed to be true about access to resources at a certain age. Thirdly, the perception could be influenced by the fact that the person has a tendency to perceive his/her resources in a certain way as manifested in the personality. The sources of influence on the self-reference system are thought to be simultaneously present and to interact, thus further complicating the relation between actual and perceived resources.

IV.5. Assets as exemplifications of resources

The core concepts of the model are the actual and perceived resources. What is of prime interest is to discover to what extent actual and perceived resources could be used as causal agents of some selected feelings and behaviour as dependent variables. That is to say, differences in access to resources in different age-cohorts could cause differences in feelings and behaviour, rather than belonging to an age-cohort per se. The discrepancies between actual and perceived resources, though interesting, do not primarily have to be explained if both have a simultaneous possibility of influencing the dependent variables.

As already mentioned, it is quite impossible to cover fully the different categories of resources. To emphasize this I have chosen to use the word assets, instead of resources, in the more applied empirical contexts. I do not here make any meaningful distinction between the words but have used resources as a theoretical concept and assets as an empirical concept to signal the difficulties in covering properly the universe of resources. Not only this, but in the empirical study to be presented, individual assets are represented by an index of self-reported health, interpersonal assets by an index of primary social network, and institutional assets by an index of social position.

IV.5.1. Health and perceived health

The definition of health as an asset varies in different studies from thoroughly clinical medical examinations to simplistic self-assessment. Often the definitions take their point of departure in the definition proposed by WHO (1958)

> *"health is a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity"*
>
> (cited from Liang 1986, p. 248)

then note the difficulties and restrict themselves to defining health in terms of absence of disease and infirmity or contrary to this, concentrate on satisfaction with health by different self-assessment schemes.

Liang (op. cit.) notes the confusion and sees it as a failure to distinguish between the theoretical constructs of health and the measurement of these constructs on different levels. Liang (op. cit.) suggests three major approaches to physical health. First, a medical model or the physical definition, where health is a residual category defined by absence of disease; second, a social definition of health or a functional model, operationalized in terms of mobility, self-maintenance and disability; third, a subjective evaluation of health or a psychological model that is an evaluation of overall physical health.

The relationship between medical examination of health and self-assessed health has been dealt with by, for example, Elinson and Trussel (1957), Maddox (1962), Tissue (1972) and LaRue et al (1979). Elinson and Trussel (op cit) show a rather small overlap between diagnostic information through interviews and clinical examination and conclude that interviews give at best a minimum estimate of morbidity. Maddox (1962) is more optimistic about the usability of the self assessment of health concluding:

> *"The objective state of an elderly person's health is the most important single determinant of his self assessment of health status"*
>
> (Maddox, 1962, p. 184)

Also Tissue (1972) and LaRue et al (1979) find sufficient correlation between clinical examination and self-assessment of health. LaRue et al (op. cit.) even recommend that self-ratings of health be used in psychosocial research with older adults.

The discrepancies between actual health and perceived health are discussed by Tornstam (1973). He suggests aspiration level or some form of adaptation to old age as an intervening variable for the underreporting of health problems he found in his study.

Women take more medicines and consult physicians more often than men do, irrespective of age (SCB, 1978). The mortality rate for women is, however, lower (Carlsson et al, 1979). To the extent that morbidity is reflected in mortality there seems to be differences in morbidity and the perception of it between men and women.

Maddox (1962) further suggests that perceived health is logically an intervening variable between the objective state of health and the social role of an ill person. In this study, perceived health is suggested as an intervening variable between self-reported health and behaviours and feelings like activity level, loneliness and life-satisfaction.

IV.5.2. Social network and perceived social network

Like health, social network has attracted great interest in welfare research as well as in social gerontology. In welfare research the social network is studied as a condition for quality in life (Allardt 1975, Vogel at al, 1987). In social gerontology, behaviour-related aspects like activities and care and feelings like loneliness and life satisfaction, are often linked with reasoning about the social network (Berg et al, 1981, Berg et al, 1982, Öberg et al, 1987, Longino & Kart, 1982, Shanas, 1979, Berg & Johansson, 1978).

Berg et al, (1981) showed that feelings of loneliness are linked with marital status, especially widowhood, which is a recurrent theme in social gerontology (Lopata, 1979). In older age there are marked differences between the sexes in marital status. With a traditionally younger age at marriage and six years longer life expectancy, women will statistically live as widows about ten years. That is to say, their social network, in this respect, tends to be weaker in older age. Even stronger than marital status as a determinant of loneliness in the elderly, was living with someone or alone (Berg et al 1982). Öberg et al (1987) showed that the married had more acquaintances than the not married in addition to the partner and this was of importance for feelings of loneliness. Activities with close relatives were shown to be strongly related to life satisfaction in a study by Longino and Kart (1982). The importance of children for care and to avoid institutionalization has been shown by Shanas (1979) and Berg & Johansson (1978) who also discussed the importance of children for reducing isolation and feelings of loneliness.

Berg et al (1981, 1982), Berg & Johansson (1978) as well as Öberg et al (1987) seem to regard loneliness as the subjective reaction to loosened networks or social isolation. In this study this is true only together with the perception of quality and power in the social network building the index of perceived interpersonal assets.

IV.5.3. Social position and perceived social position

Social position is in this study indexed from income, education and occupational position. These variables are frequently used in welfare research (SOU 1985, SCB 1985, SCB 1987) and as stratifying variables in social gerontology (Streib, 1985).

Occupational position is pointed out by Streib (1985) to be an important dimension in social ranking. In this study the retired were assigned to their earlier occupation as the mandatory retirement would otherwise make the comparison difficult. Streib (op. cit.) supports this with arguments allowing for the carry over effects of status in earlier occupation to retirement. The quality of retrospective questions about earlier work is shown to be often satisfactory (Wãrneryd et al, 1989).

In the beginning of the 1980's average real income in Sweden declined (SCB, 1987). This have increased the number of poor among the workers and increased the number of persons in need of social security not least among working class youth.

At the same time the financial situation of the aged has improved. About 80% of the income of persons above the retirement age of 65 comes from various forms of pension. These are nationwide, are developing, are tied to a consumption index, and in real terms, are unaffected by inflation. The very poor among the aged have decreased from 15.5% in 1975 to 2% in 1981 (SOU 1985). There are, however, still considerable income differences between different groups of retirees (SCB, 1985). The national supplementary pension, tied to "life income", is being introduced and is of greater importance to young retirees than to older ones. As many women have worked fewer years than men and often part-time, their "life income" will be low compared to men. Older women constitute a group with relatively low pension income (SCB 1985).

Streib (1985) discusses the relation between actual income and the perceived financial situation of the elderly. He notices that actual income loss in retirement is often not reflected in feelings of decline in financial standard. Referring to a study by Streib and Schneider (1971), he points out the fact that about the same percentage say they worry about money before and after retirement. Apart from the possibility that the elderly are unwilling to admit the decline, he offers three tentative explanations. First, the elderly have already invested in a stock of goods and need to spend less. Second, the elderly could benefit from inter-household transfers. Third, some general attitude that retired people should receive lower income than working people could be internalized. This third possibility is in line with Tornstam's (1973) reasoning about perceived health among the elderly.

In addition to occupation and income Streib (1985) points to the importance of educational background as a determiner of social position. There are obviously cohort differences in educational level disadvantaging older age-cohorts. Just as evidently there is a lasting advantage in higher education due to the possibilities of reaching higher occupational position and higher income.

IV.6. Resources in relation to environment

Environmental demands are not constant as surrounding people (the social environment) as well as the unevenly distributed infrastructure and nature (the physical environment) will never be exactly the same for any person whatever access he or she has to resources. Further, the development of the society, the result of the combining of resources in that society, has changed the access to resources as well as the environmental demands, thus, making history and cohort experiences important also to the perception of resources. In gerontology this is often discussed in terms of modernization in society (Palmore & Manton, 1974, Achenbaum, 1985).

In a study of age perceptions in different cultures (Bengtson et al, 1975), it is suggested that modernization in terms of societal development is related to negative perceptions of aging. In terms of resources it is possible to interpret the data in two, perhaps interacting, ways. On the one hand some resources that in a more stable society used to be in the possession of the elderly are now gliding out of their hands; on the other, the expansion of resources emanating from societal development is primarily benefiting younger age-groups; or it may be a combination of these "explanations". In a developing society, it is not only the relations between different kinds of resources which will change; the perception of the resources will also change. The kind of access people who are young today will have to resources will differ from that which people who are old today had when young. This will have an effect on the perception of their own resources as well as on the perception of the resources of others. It will also an have effect on the possibility of managing different environmental demands.

People who are old today learned how to perceive the resources of the aged and aging when they were young, perhaps 60 years ago or more. At that time most of the elderly had, of course, access to resources to a much lower extent than the elderly have today. This will be especially true for resources like health, social network in terms of people of the same age, finances or wealth in broader terms. This will also have an effect on the perception of present resources of their own and others as well as of the possibilities of managing environmental demands. It may be that a lag in the perception of resources prevents increasing or decreasing resources from being reflected in behaviour. The relative character of resources in relation to environmental demands has been pointed out by Solem (1972). He suggests that aging could be described in terms of loss of resources as is mentioned in chapter III. When resources are low in relation to environmental demands, there will be an increased feeling of difficulty and an increased feeling of external locus of control. The relationship could be made more favourable, Solem (op cit) suggests, by reducing the environmental demands. The social learning would then increase the feeling of internal locus of control.

Svensson (1984) has pointed out the possibilities of increased overt competence in the institutionalized through manipulation of the environment. Johansson (1976) discussed the possibility of reducing environmental demands through social policy and Malmberg and Berg (1984) have outlined traditional care of the elderly in terms of decreasing environmental demands and suggested that future care of the old should be directed towards increasing their resources. This is also suggested by Kuypers and Bengtson (1973) in the social reconstruction syndrome and shown by Carp (1977) to be effective in objective terms as well as in terms of perceived quality in life.

The concept of arenas that has attracted the interest of, for example, Tornstam (1982), could be seen as an environmental restriction. According to that view, if resources are rich enough the individual will arrange access to arenas of his or her choice. A further possibility is to see access to arenas as a resource component on its own and include it as such in model building or in analysis.

IV.7. Feelings and behaviour as dependent variables

As is evident from chapter II when discussing normative adaptation, the gerontological perspective in this thesis is partly disclosed by the choice of dependent variables in feelings of loneliness and life-satisfaction and the behaviour-related variable of activity. I will here just briefly discuss these concepts in relation to the model.

The qualitative difference between feelings and behaviour has been previously touched upon. Behaviour is overt and it is only occasionally possible to interpret what feelings are hidden. How you feel is only occasionally deducible from behaviour. How does, for example, a lonely person feel? We can ask and with sufficient verbal talent on the part of the respondent and sufficient interpretative talent on the part of the interviewer we will discover something about this person's feelings of loneliness. If we ask more lonely persons, we will ultimately know something about loneliness. Then how does a lonely person behave? Here we can observe, but only occasionally will the observed behaviour reflect the feelings of loneliness. A lonely person is never just lonely. Then we can ask not only how this person feels but also how he behaves when feeling lonely in a certain situation. Whether you observe or ask, you have to interpret the behaviour or the stated behaviour in terms of this reflecting loneliness.

The part of the sentence "in a certain situation" is reflecting the impact of the surrounding environment. It is difficult to conceptionalize free floating loneliness as a behaviour. The environment in which the loneliness and its reflections in behaviour is stated (e.g. in a study of loneliness) is also of importance.

Although feelings and behaviours are here treated as mainly dependent variables, depending upon the actual and perceived resources in a constant interplay with the surrounding environment, they can also influence "higher order" variables through different feedback loops. In the example of loneliness, it is quite possible to think that the feelings of loneliness will affect the perceived resources and ultimately the actual resources. When or if a person is widowed or divorced (the interpersonal resources are decreasing), feelings of loneliness are usual. But lonely people are difficult to interact with, which could lead to a further reduction in the interpersonal resources.

The dependent variables in this thesis are examples of variables of interest in discussing normative adaptation. The choice was rather haphazard except for the fact that activity level, loneliness and life satisfaction are often used as variables of interest in social gerontology and often shown to correlate negatively with age. That is, activity level is usually shown to be lower, loneliness more frequent and life satisfaction more dubious in older age. We can disregard the fact that the normative element always give rise to objections and just notice that the concepts have been and still are of interest. The concepts are treated separately and no attempt has been made to use them as a global measure or index of normative adaptation.

IV.7.1. Activity

In the activity theoretical approach roles and activity are seen as closely related. Role loss in old age is seen as activity loss and as predisposing to low morale (Lemon et al 1972). A major role loss is tied to retirement and the loss of activities that goes with this. Palmore et al (1979) showed that retirement has especially negative effects on social psychological adaptation in old age. The possibilities of escaping the negative effects have often been discussed in terms of possibilities to compensate for the activities lost in retirement from occupation with satisfying leisure activities (De Carlo, 1974, Thompson, 1973, Peppers, 1976). These authors showed that some leisure activities were positively related to high morale in old age and assumed that variables like health and income could explain the activity as well as the high morale. Some Swedish studies (SOU 1977) show high life satisfaction in retirement, a positive attitude to retirement among white-collar workers (Malmberg, 1984, Rehn, 1984), and an even more positive attitude to retirement as pensioners. Burrus-Bammel & Bammel (1985) state that Americans have been described as work-oriented, this could perhaps account for some of the differences between American and Swedish preoccupation with and results of retirement studies.

There is low agreement in leisure studies in social gerontology about how to define leisure activity (Arvidsson, 1980). Burrus-Bammel & Bammel (1985) refer to a study by Pfeiffer & Davies (1971) showing that the great majority define leisure as "anything that is fun" or "anything that is relaxing". The difficulties are noted by Lawton (1985):

> *"...the term leisure has become packed with such diverse meanings that we shall do better to consider all types of activity as candidates for the pleasure and self-realization ascribed to leisure"*
>
> (Lawton, p. 127, 1985)

Often the problem is solved through asking the persons in a study if they have or have not, within a given period of time, taken part in some activity agreed upon to be in the nature of leisure.

In a Swedish study of this type (SOU, 1985) it is shown that attending church is the only activity more common among older persons than among younger. Activities at home, like reading books and weekly magazines are, together with hobbies like needlework and woodwork, as frequent in old age as in younger years. Other leisure activities are regularly less common among older people.

Lemon et al (1972) and Longino & Kart (1982) have extracted three types of activity, namely

1) informal activity that is social interaction with relatives friends and neighbours
2) formal activity, social participation in formal voluntary organizations
3) solitary activity such as watching television, reading and hobbies of a solitary nature.

IV.7.2. Loneliness

Most studies on loneliness in social gerontology have shown a rather atheoretical approach. Often feelings of loneliness are tied to the strength of the social network or to some measurement of isolation as was briefly discussed in connection with social network earlier in this chapter.

It has been shown (Tornstam, 1981, Berg et al, 1981, Berg et al, 1982) that a minority (between 11% and 27% depending on sample and measurement) among the elderly in Sweden report feelings of loneliness. Tornstam (1981) further shows that loneliness is to about the same extent a problem in all age-groups but that the problem of loneliness among the elderly is exaggerated in the beliefs of all age-groups and more so among the younger. In a study of in-movers to homes for the aged (Malmberg & Berg, 1983), it was shown that about 1/5 of the elderly thought that loneliness had been a contributing or determining factor in moving, while among the affected executives this was thought to be true for about 2/3 of the movers. Thus loneliness is a problem to some of the elderly but the problem seems to be overestimated in public opinion in general. This is not to say that feelings of loneliness among the aged are of minor interest but, only that the problem exists in all age groups and is of interest in itself.

Malmberg (1986) pointed to another problem with the concept of loneliness. He showed that loneliness implies a somewhat different meaning in different age-groups. In younger years, feelings of loneliness are related to lack of company, feelings of insufficiency and weakness, and low self-rated financial status. In the young-old, loneliness goes with feeling deserted, missing company and low life satisfaction while, among the old-old, low quality of contacts with relatives and friends, missing company and low self-rated health seem to be predictors of loneliness. Although the concept of loneliness shares some aspects in all age-groups, there also seem to be some age-specific aspects. Still, we have to use the word although it does not mean exactly the same thing in all age-groups. This points to the complexity of the concept and suggests it should be handled with some caution.

The atheoretical approach in Swedish studies of loneliness is not explained by lack of theories. Perlman and Peplau (1982) distinguish eight theoretical approaches to loneliness, from early psychodynamic models, to more recent research and theory applications. Of course, distinct theories can deepen the knowledge in distinct areas of research. In a broader sense, it is unfortunate, however, if every single aspect of behaviours or feelings has to be understood on the basis of its own particular theoretical apparatus. In this study thus a broader more general approach is tried in order to capture different outcome variables of which loneliness is one.

IV.7.3. Life satisfaction

What is here called life satisfaction is an expression of subjective well-being. Subjective well-being is seen as the core concept of many measurements on life satisfaction, morale and contentment (Larson, 1978). Life satisfaction or subjective well-being is a key variable in understanding successful aging, which is something that is of interest in most socio-gerontological theories or models.

Larson (op. cit.) reviewed studies on the well-being of older Americans and identified health, socioeconomic factors and degree of social interaction as the variables most strongly related to subjective well-being. This is in agreement with the model here proposed, as self-reported health is used as an asset among the individual resources, social interaction is tied to interpersonal resources and socio-economic factors are assets tied to institutional resources.

Bild & Havighurst (1976) found health to be most strongly associated with subjective well-being. In a multivariate model Hoyt et al (1980) showed health to be significantly correlated to subjective well-being. In a path analysis of predictors for life satisfaction, health was found to have the second strongest impact on life satisfaction among men and the third strongest among women (Medley, 1976). The relative importance of health for life satisfaction in both sexes was, however, shown to be reversed in a study by Markides & Martin (1979). The correlation between health and subjective well-being is summarized by Larson (1978) in a number of studies to vary between $r = .2$ and $r = .4$, "explaining" 4% to 16% of the variance in subjective well-being. Larson (op cit) notes the correlation to be stronger in self-assessed health compared to more "objective" ratings. Tornstam (1975) uses subjective health status as an intervening variable between objective health status and general satisfaction in a path-analysis much in agreement with the structure of the model presented in this study.

Lemon et al (1972) showed activities together with close relatives and friends to be correlated with life satisfaction in their formal testing of the activity theory. To be engaged in these activities you do, of course, have to have close relatives and friends. Marital status is shown to have a slightly independent relation to social well-being in the study by Larson (1978). Widowhood seems to affect life satisfaction negatively (Palmore et al, 1979), but the higher life satisfaction among men compared to women in ages over 65 could not be explained by marital status in a study by Spreizer & Snyder (1974). In a study of older women (Beckman & Houser, 1982), widows with grown children showed stronger subjective well-being than childless widows. Marital status and family settings are further shown to be of importance to subjective well-being in old age by Bild & Havighurst (1976), Chatfield (1977) and Holahan (1981). The correlation between marital status and subjective well-being is summarized by Larson (1978) to be between r = .1 to r = .2 "explaining" 1% to 4% of the variance in well-being. Social activity as a somewhat broader term has been shown to vary between r = .1 to r = .3, thus being able to "explain" up to 9% of the variation.

Further, socio-economic status was shown to correlate r = .1 to r = .3 in the reviewed studies (Larson op cit) thus "explaining" between 1% and 9% of the variation in subjective well-being. The importance of the socioeconomic situation or standard of living is further pointed out by a number of authors (Bild & Havighurst, 1976, Chatfield, 1977, Hoyt et al, 1980, Medley, 1976 and Spreitzer & Snyder, 1974). The impact of socioeconomic factors on subjective well-being is thus often demonstrated although seldom impressively high.

Chapter V.

THE EMPIRICAL STUDY: material and method

V.1. Some background

At the end of 1983 and the beginning of 1984 a study of the oral health of individuals aged 3 to 80 years was carried out in the city of Jönköping, Sweden. This city has about 107,000 inhabitants and is situated in the middle of southern Sweden. It is the administrative centre of a county and a centre of transportation, industry and commerce.

In connection with the oral health study, a rather extensive questionnaire was administered. Among the questions primarily directed towards oral health, a set of questions of behavioural scientific interest was put to persons between 20 and 80 years of age. The data were thus collected as part of an omnibus investigation primarily dealing with odontological inquiries. This fact limited the possibilities of using in-depth investigation but opened up ways to reach a large and interesting sample. The empirical study is tentative in the sense that an untried structure will be tested.

V.2. The age-cohorts in a historical setting

There are obviously a very large number of historical events that could have influenced especially the older age-cohorts, as they have lived longer. In Figure 5 a few of the major historical events that could be of importance to the cohorts are shown.

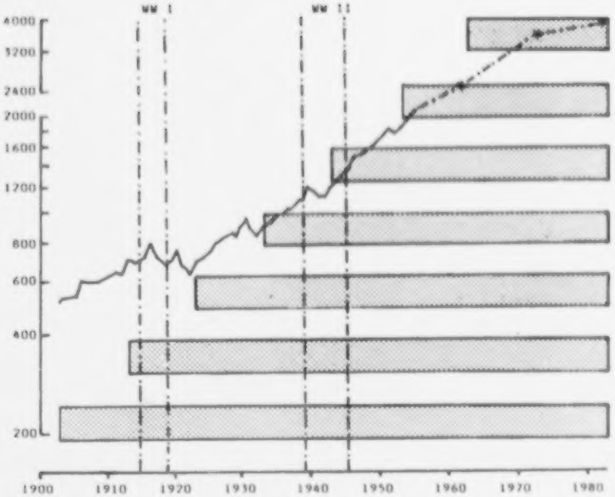


Figure 5. The age-cohorts in a historical perspective, showing the two world wars experienced by the age-cohorts at different ages and the development of the GNP/capita* based on prices of 1913.

* The development of GNP/capita is shown by Bunte & Jörberg (1986). The line after 1955 is estimated on the basis of values for the years 1963, 1973 and 1982.

The 80-year-olds were young during WW I, and many of them entered the labour force at the end of the war. The 70-year-olds were children during WW I. In the two cohorts mentioned and, to some extent also among the 60-year-olds, the men were drafted for military service during WW II. The 50-year-olds were children and the 40-year-olds infants at the end of the war.

The GNP per capita in 1913 prices has been increasing steadily during the 20th century with the exception of the war periods, the deflation period in Sweden at the beginning of the 1920's and the depression during the 1930's. From the curve, it is possible to conclude that the GNP per capita is about eight times as high in 1983 as it was in 1903. Although this does not mean that people have eight times as much money or eight times as much wealth at the end of the period it is obvious that, the economic situation has changed dramatically during the century and with the economic situation a number of other factors.

V.3. The aim of the empirical study

A common stereotype among the general public is that feelings and behaviour are different in old age. It is believed that older people behave and feel in a certain way just because they are old. The review of the literature suggests some stereotypes connected with the dependent variables chosen; in older age activity levels are often lower, loneliness more common, and life satisfaction threatened.

With the resource theory approach suggested in this thesis the central idea is to show that the differences, if any, in activity level, feelings of loneliness, and life satisfaction are due to differences in access to assets and how these assets are perceived rather than to differences in age. The actual assets are lower in older age-cohorts as an aging effect, as a period effect, and/or as a cohort effect. Thus differences in activity level, loneliness, and life satisfaction are only indirectly explained by differences due to membership of different age-cohorts and directly explained by differences in access to assets, and how they are perceived.

The aim of the empirical study is twofold. First to test the core concepts and the suggested structure of the theoretical model and second, while doing so, to describe the age-cohorts by the variables used.

Sex is used as a structural variable, that is, analyses are made in the total sample as well as for each sex separately. The model, of course, will gain strength if the suggested pattern is reproducable irrespective of sex.

V.4. The measurements used

The omnibus character of the study obviously put limits on the possibilities of using circumstantial tests and measurements. Instead, scales with a few item and single-item measurements, often added to indices of different kinds, are used to cover the core concepts (see Appendix III).

There is a technical problem in adding variables to indices of different kinds as the variables have often different dispersion. In this study a solution suggested by Galtung (1964) is used. He suggested that the variables should be dichotomized and then added. This procedure will be used when adding the indices representing the different categories of assets. The loss of information is thought to be compensated for by a gain in clarity.

The variables used are clustered together in indices on a basis of similarity. This means that the variables partly cover the same conceptual area. It also means that there will be a correlation between the variables that are joined to indices as a matter of construction. This will not lead to any major problems as, once constructed, the indices will be used as unities standing by themselves.

Actual individual assets are reflected in a measurement of health; that is, a form of self-reported health in terms of stated illness, of being treated or checked up for some illness by a physician, and of taking any medicine at the time of measurement (Appendix II). The variables thus will be dichotomized and added to an index of self-reported health. Self-reported health is here defined by the absence of problems, as in the medical model in Liang's (1986) terms.

Actual interpersonal assets are in this study indicated by primary social network. In accordance with Galtung (op. cit.), dichotomizations of marital status, frequency of interaction and having children will be made and the scores added, forming an index of primary social network (Appendix II).

Actual institutional assets are represented by social position. As with self-reported health and primary social network, the variables constituting social position in this study are dichotomized according to Galtung (op cit) and the scores added to an index. The variables used are education, occupational position and income (Appendix II).

As in the case of the actual assets, the items measuring the perceived assets will be dichotomized and the scores added to indices of perceived individual assets, perceived interpersonal assets, and perceived institutional assets.

The perceived individual assets are measured by a single item asking the participants to rate their health from good to bad, together with two items concerning perceived ego strength. The perceived interpersonal assets are indicated by items dealing with perceived quality and perceived power in the close social network, dichotomized and added to an index of perceived interpersonal assets. Perceived institutional assets are measured by items about satisfaction with the economic situation and perceived power in relation to authorities (Appendix II).

The dependent variables are perceived activity level, loneliness and life satisfaction (Appendix II). Perceived activity level is represented by three items concerning activities the participants do on their own, activities with close relatives and friends and participation in formally organized activities. Thus, a combination of the earlier mentioned approaches suggested by Lawton (1985) and Lemon et al (1972) and Longino & Kart (1982) is used.

Loneliness is measured with a single often used question together with four items from the UCLA-loneliness scale (Russel, 1982), reformulated as questions instead of the statements that were originally used.

In an analysis of the correlation between different measurements of life satisfaction, morale and adjustment, Lohmann (1977) shows single item measurement to correlate with different scales between $r = .24$ to $r = .47$. She points to the rather small mutual conceptual area in the single item measurement and the scales to measure subjective well-being. Life satisfaction or subjective well-being is usually measured by different scales, only seldom (e.g., Spreitzer & Snyder, 1974) by single item measurement. In this study, however, a single item measurement is used. The questionnaire used is shown in the appendix.

V.5. Statistical considerations

All statistics are computed on an IBM PC with SPSS/PC + soft-ware programme (Norusis, 1986). This manual is referred to for information about the data processing procedures.

As the model suggests direction in testing, one-tailed probabilities are used. Relationships are considered of statistical significance if the probability of their random occurrence is less than 5%.

Werdelin (1982), points out the risk for redundancy error when the number of tests is large. The risk of Type I error (Fergusson,1966) is even larger as the Pearson product-moment correlation has been used as a descriptive statistic. The Pearson product-moment correlation tends to ascribe statistical significance also to low correlations when the sample is large. The risk of jumping to wrong conclusions is reduced as the model suggests the directions of the relationships. The alpha level of 5% was chosen rather high as the empirical study was testing an untried pattern with rather rough measurements and indices. The main advantage with the Pearson product-moment correlation coefficient is that it is well-known and hence useful as a descriptive statistic. In the actual testing for significance, primarily analysis of variance has been used. The analysis of variance used is the ANOVA procedure in the SPSS/PC + package. The full factorial design was used. The ANOVA procedure requires the dependent variable to be on an interval level and one or more factors (independent variables) to define the groups.

When the linearity of the relationships between the variables is discussed, the eta coefficient is shown. The test of linearity was conducted by the MEANS procedure in the SPSS/PC + package. This procedure gives a one-way analysis of variance where the between-group sum of squares is divided into linear and nonlinear components. Factor analysis (FACTOR) has been used in one case to validate a suggested structure.

Multiple regression analysis (REGRESSION) has been used in the path analyses to get the necessary standardized regression coefficients. The forward selection method was used. This method introduces into the equation the variable with the largest positive or negative correlation with the dependent variable. The criterion of probability of F-to-enter was put at PIN(0.99) (POUT(1.00)). This procedure gives beta values for all independent variables. The significance of the beta value at entrance into the equation is noted. This means that a significant variable can enter into the equation after an insignificant one has been introduced. Only the significant paths are shown in the path diagrams.

V.5.1. Causal inferences and path analysis

The model presented implies causality between the variables. In the theoretical terminology, a variation in access to actual resources is assumed to be reflected in the perception of the resources. Or, in other words, the access to resources cause the perception of them, rather than the other way round. The access to actual resources and the perception of the resources is assumed to influence feelings and behaviour of different kinds, rather than the other way round. Further, access to resources can be caused by differences in different age-cohorts. These differences in their turn can be an effect of aging, cohort and/or period. These are the main thoughts in the resource model presented. In addition to these ideas it is also hypothesized that a self-reference system can explain some of the discrepancies between actual and perceived resources. Finally the theoretical model suggests that the actual and perceived resources, the self-reference system as well as feelings and behaviour, are connected to the surrounding environment.

The core concepts to be tested empirically are the influence of the actual assets on the perceived assets and the influence of actual as well as perceived assets on some dependent variables, in this case perceived activity level, loneliness and life satisfaction. The impact of belonging to a certain age-cohort on the dependent variables is assumed to be explained by differences in access to actual assets in different age-cohorts. It is never possible to prove causality in any kind of study and certainly not in a cross-sectional one. The idea of causality has to be grounded in the logic of the theory. If this logic is accepted, path analysis is a powerful tool to study the strength of the hypothesized causation (Blalock Jr, 1964, Blalock Jr, 1968, Werdelin, 1982, Asher, 1984). Blalock Jr (1964) writes that causal laws are assumed by the researcher. He also points out the fact that one of the essentials of the conception of a cause is the idea of "producing", not merely that a change in one variable is followed by a change in another, as night follows day.

It may be wise to treat causality as primitive or undefined or at least not formally defined. It is a fact that causal laws actually are applicable only to a completely isolated system (Blalock Jr, op. cit.). This isolation is actually never provable and :

> *"Clearly, a causal relationship between two variables cannot be evaluated empirically unless we can make certain simplifying assumptions about other variables".*
>
> (Blalock Jr, 1964, p. 13)

These conditions are summarized by Kim and Kohout (1975) when they describe path analysis as a method of

> *"interpreting linear relationships among a set of variables by assuming that (1) a (weak) causal order among these variables is known and (2) the relationships among these variables are causally closed".*
>
> (Kim & Kohout, 1975, p . 383).

In the present study this will mean that belonging to a certain age-cohort can cause differences in access to actual assets but not the other way around. Further, actual assets cause the perception of them rather than the other way around and, finally, that actual and perceived assets cause differences in the dependent variables.

There is a risk of violating the restriction of weak causal order, as there is a possibility of some feed-back in the model. This will lead to an overestimation of the strength of the paths in the analyses. There is also a risk of violating the restriction of causal closure as the environment is not kept under control. I will have to, as suggested by Blalock Jr. (1964) "make the simplifying assumption that the environmental forcings do not operate in any unknown way", that is, that the impact from outside on the model will be evenly distributed.

V.5.2. The relationships between the core concepts as a path model

In the suggested resource model, there are a number of implicit or explicit statements about relations and causal effects. The relations between the core concepts are summarized in a path diagram.

1) The access to actual assets is assumed to be less in older age-cohorts than in younger. When the definition of aging suggested by Birren and

Renner (1977) was discussed in chapter III, I pointed out the curvilinear shape of access to resources in different age-cohorts (Figure 1). It is not known in what age-cohort the downward turn appears. It is suggested in Figure 1 that this turn could be different for different categories of resources. If the curvilinearity is too troublesome, perhaps some of the age-cohorts have to be dropped as the statistical methods used are primarily applicable with linear relationships.

2) There may be, but do not necessarily have to be, correlations between the different categories of actual assets. If there are, they should be positive, that is, more actual assets in one category are a sign of more actual assets in another.

3) The actual assets are assumed to have a positive impact on the perceived assets, primarily in each category. That is, actual individual assets should have an impact primarily on perceived individual assets as should actual interpersonal ones have on perceived interpersonal assets and actual institutional assets on perceived institutional ones. If there are other influences of the actual assets on the perceived ones, they should be positive.

4) There may be, but do not necessarily have to be, correlations between the different categories of perceived assets. If there are, they should be positive, that is, more perceived assets in one category are a sign of more perceived assets in another.

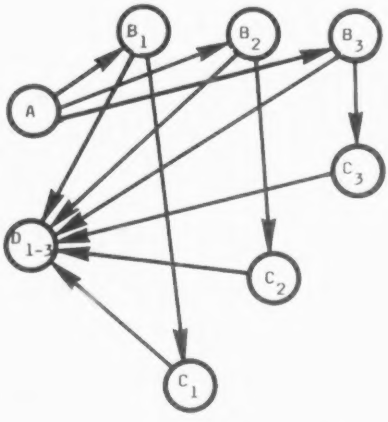
5) I am uncertain whether there is any relation between age-cohorts and perceived assets. Logically the correlation ought to be negative, at least if there is a strong negative correlation between age-cohorts and actual assets. But the correlations are often not very strong (Maddox, 1962; Berg et al. 1982; Streib, 1985) and the perception of different phenomena "has a life of its own", at least to some degree (Maddox, 1962; Bengtson and Kuypers, 1971; Ahammer and Baltes, 1972; Tornstam 1973, 1975).

6) Belonging to an older age-cohort will not have any direct negative impact on the dependent variables when the access to assets is controlled for. This means that the content implied in differences in age-cohorts will be explained by the differences in access to actual assets.

7) Access to actual assets has an impact on the dependent variables.

8) Differences in the perception of the assets has an impact on the dependent variables.

These relations between the core concepts are summarized in the path diagram in Figure 6.



A	Age-cohorts
B_1	Self-reported health
B_2	Primary social network
B_3	Social position
C_1	Perceived individual assets
C_2	Perceived interpersonal assets
C_3	Perceived institutional assets
D_1	Perceived activity level
D_2	Loneliness
D_3	Life satisfaction

Figure 6. The relations between the core concepts shown in a path diagram

V.6 The sampling

From the four central parishes of Jönköping, covering a population of about 47.000 persons, seven random samples of persons aged 20, 30, 40, 50, 60, 70 and 80 years were drawn. Each age-cohort thus represented one single year of birth each, namely 1963, 1953, 1943, 1933, 1923, 1913 and 1903. The seven random samples could be seen as one non-proportional stratified random sample representing the predominantly urban parts of the city.

Krauss (1980) points out that in cross-sectional studies there are often different age ranges in the different age-groups. He notices that the age ranges in the older age groups are regularly wider than in younger age-groups. A problem then often appears because the variability could be a result of unequal age ranges rather than of true age differences in intra-group variability. This problem is avoided here as the age range is exactly one year in every studied cohort. In each age-cohort 130 persons were sampled to ensure that about 100 persons in each age-cohort would take part in the investigation after the expected drop-out.

V.6.1. The sample

The statistical abstract of Jönköping (Jönköpings kommun, SÅ, 1983) does not permit comparisons of age classes at the parish level, and thus the discussion presented below of sample proportions and sex representativity is based on figures for the total municipality. The proportion of sampled persons varies between 8.2%, of the total population in the municipality for the cohort of 20-year-olds, and 23.2% of the population for the cohort of those 80 years old. If the population is evenly distributed over age-cohorts in the municipality, this would mean that about 18.5% of the 20-year-olds and about half of all 80-year-olds were sampled. The sample size is, except for the 80-year-olds rather close to 10% of the population or 20% of the central parishes, subject to the considerations stated above.

The anticipated drop-out rate turned out to be a rather close estimation for all age-cohorts except the 80-year-olds where the drop-out was somewhat higher. A description of reasons for not taking part in the study is presented by Hugosson et al (1986) and shown here with the omission of primarily the age-cohorts 15 years and younger who were not included in the behavioural scientific part of the study.

Table 1. Number of persons not taking part in the study and the various reasons for refusal

	Age-cohorts						
	20	30	40	50	60	70	80
Could not be reached by letter or telephone		6	12	8	4	5	9
Moved	12	7	2		1	1	
Could not leave work	1	2	1		1		
Military service	6						
Afraid of dentists	2	2	1	1			
Had recently visited dentist	2	2	1	2	3		
Have no own teeth (nothing to examine)				2	1	8	7
Seriously ill, handicapped, senile		1	1	5	4	8	19
Deceased				1	1		5
No special reason, not interested	7	12	13	8	17	9	10
Total number of non-respondents	30	32	31	27	32	31	50
Non-respondents in *percent*	*23*	*24*	*23*	*20*	*24*	*23*	*38*

Almost all persons taking part in the odontological study and the clinical examination of oral health also answered the questions in the behavioural part of the study. Also of interest is the fact that among the refusals about 15% refused for "odontological" reasons: they were afraid of dentists, had recently visited their dentist, or had no teeth of their own. From a behavioural point of view these reasons for refusal are atypical.

The numbers of persons actually taking part of the study are presented in Table 2.

Table 2. Numbers of persons taking part of the study divided into age-cohorts and by sex. Within brackets the population size 1983 (Jönköpings kommun, SÅ, 1983).

	Age-cohorts							
	20	30	40	50	60	70	80	**Tot**
Women	54(782)	48(654)	53(801)	60(557)	48(697)	51(654)	50(348)	364(4493)
Men	44(804)	52(662)	46(771)	43(592)	50(586)	46(560)	30(213)	311(4188)
Total	98(1586)	100(1316)	99(1572)	103(1149)	98(1283)	97(1214)	80(561)	675(8681)

The proportion of persons of the total population in the municipality that took part of the study thus varied from 6.2% among the 20-year-olds to 14.3% among the 80-year-olds. There were no significant differences between the sexes of the sampled persons who took part in the investigation compared to the total population in any age-cohort, except among the 50-year-olds where women were over-representated (20; chi^2 = 1.38 (df = 1), 30; chi^2 = .13 (df = 1), 40; chi^2 = .29 (df = 1), 50; chi^2 = 4.35 (df = 1) $p < .05$, 60; chi^2 = 1.20 (df = 1), 70; chi^2 = .08 (df = 1), 80; chi^2 = .01 (df = 1)).

Chapter VI.

RESULTS: the actual assets

VI.1. Individual assets

Among all individual assets of importance, health or, in this study self-reported health, was chosen. Some reasons for this were discussed in previous chapters. Health has attracted much interest in social gerontology and not least in socio-gerontological practice, but in gerontological research health is also recognized as a major factor for social well-being and normative adaptation. Health is seen as a typical individual asset. In this study, self-reported health measured by means of three different variables, is used to give a picture of health. As the medical model (Liang, 1986) was chosen the absence of problems represent better self-reported health or access to more individual assets.

VI.1.1. Number of diseases

The questionnaire permitted the participants to state at most three diseases. Seventy-five percent reported no illness at all, 15% reported one, 6% two and 4% three diseases.

The diseases were coded according to the International Classification of Diseases (1977) headings. Most frequently stated were diseases of the circulatory system (32%), diseases of the musculoskeletal system and connective tissues (20%), diseases of the nervous system and sense organs (15%) and endocrine, nutritional and metabolic diseases and immunity disorders (10%). Other reports of diseases were rather few and, except for diseases of the digestive system (8%), none accounted for more than 5 % of the stated diseases.

/

VI.1.2. Medical treatment or checkups

It was possible to state three diseases being treated or currently being checked by physician. In the total sample 69% were not currently being treated or checked for any disease, 24% for one disease, 6% for two and 1% who were being treated or checked by physician for three diseases.

Most frequently stated were diseases of the circulatory system (42%), endocrine, nutritional and metabolic diseases and immunity disorders (12%), diseases of the nervous system and sense organs (10%), and diseases of the musculoskeletal system and connective tissue (9%). Other diseases were not very frequent, and none were mentioned by more than 5% of the participants stating diseases currently being treated or checked.

Comparing the self-reported diseases with the diseases being treated or checked, it was obvious that diseases of the circulatory system and endocrine, nutritional and metabolic diseases and immunity disorders were more often treated or, perhaps especially, checked-up than stated as a disease. By contrast, diseases of the musculoskeletal system and diseases of the nervous system and sense organs were often stated as diseases although they were not being currently treated or checked by physician. All this, of course, seems fairly reasonable.

VI.1.3. Medicines

Two thirds of the persons in the total sample who answered the questions did not regularly take any medicine, 18% took one, 9% two, and 6% regularly at least three medicines.

The medicines were coded according to FASS (Pharmaceutic Specialities for Sweden) (1983). The medicines most used were preparations for diseases of the cardiovascular system accounting for 47% of the medicines used and analgesics for 10%. Preparations for diseases of the central

79

nervous system (9%), hormonal preparations (8%), and preparations for disturbances in the digestive system (6%) were other drugs reported fairly frequently. Thus, a fairly large number used psycho-pharmaceutic medicines compared to psychiatric problems stated as diseases and compared to psychiatric problems, regularly treated or checked by a physician at the time of measurement.

VI.1.4. Self-reported health

The three presented health variables were dichotomized according to the method suggested by Galtung (1964) and added to an index of self-reported health. All dichotomization has disadvantages: information is lost, and the cutting point is chosen subjectively. In this study the cutting points were placed at no illness compared to one or more illness, not being treated or checked-up for any disease versus being treated or checked-up for one or more, not taking any medicine versus taking one or more. These dichotomizations were relatively unproblematic. Evidently there is a qualitative difference at the cutting points that was used as a criterion. In this case the criterion coincided with the pragmatic attempt to obtain maximal discriminating power in each question by splitting the sample in two halves with as nearly as possible, the same number of persons in each half. The percentage in each age-cohort who scored one point on the dichotomous variables to measure self-reported health is shown in Figure 7.

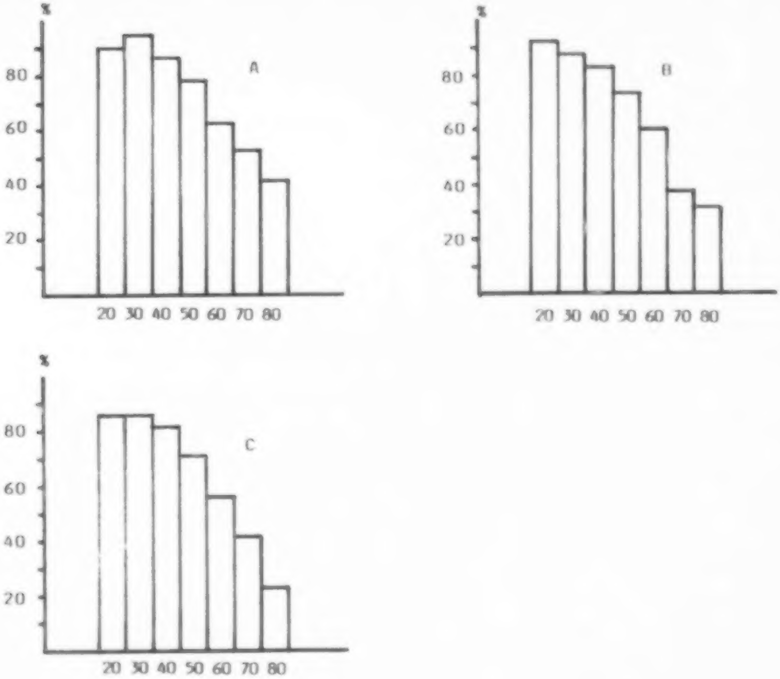


Figure 7. Percent in the different age-cohorts that are
A) completely healthy
B) not being currently treated or checked for any diseases
C) taking no medicine

The dichotomized variables no illness, no treatment or check-up and no medicines added together give an index of self-reported health. This index can vary from 0 to 3, where zero points mean low self-reported health, an expression of low individual assets in this context; and three points mean, no problem, high self-reported health, an expression of high individual assets in this context. Table 3 shows the distribution of self-reported health in the total sample.

Table 3. The distribution of self-reported health in percent in the total sample

Points	0	1	2	3	$\bar{x}$	S.D.	N
Self-reported health	18	13	11	58	2.1	1.2	636

The majority of the participants scored three points in the index of self-reported health. Almost one fifth scored no points at all, which indicates low self-reported health.

VI.1.5. Self-reported health in the different age-cohorts

Self-reported health computed for different age-cohorts is shown in Table 4.

Table 4. Points on the index of self-reported health in percent in each age-cohort

Age-cohorts	20	30	40	50	60	70	80	Total
0	3	3	6	14	24	37	48	18
1	4	6	9	12	19	21	25	13
2	15	8	11	11	10	13	12	11
3	78	83	74	63	47	29	15	58
$\bar{x}$	2.7	2.7	2.5	2.2	1.8	1.3	1.0	2.1
S.D.	.7	.7	.9	1.1	1.3	1.3	[illegible]	1.2
N	98	97	96	100	90	90	65	636

Only a minority reported maximum self-reported health scores among persons 60 years of age and older. Among the 80-year-olds almost half the group had low self-reported health in terms of the index used. When tested, this distribution showed significant deviation from linearity (F(5,636) = 3.30, $p < .01$). Self-reported health by sex is shown in Figure 8.

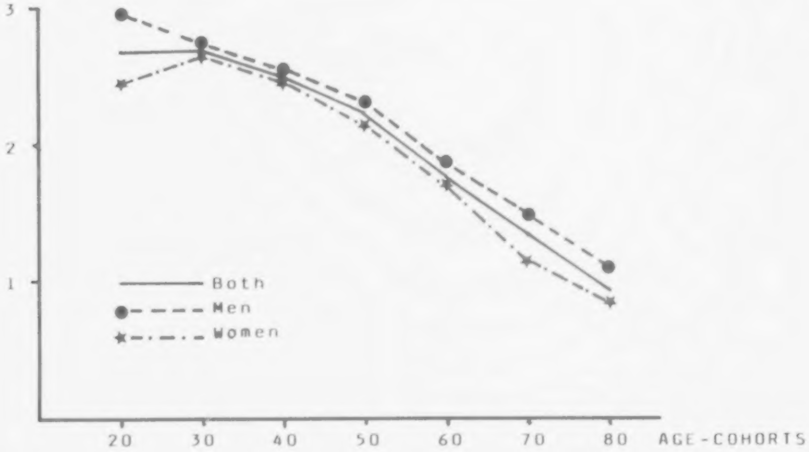


Figure 8. Mean self-reported health for men, women and both sexes in different age-cohorts.

When linearity was tested for the different sexes, men showed no deviation from linearity (F(5,298) = .54) but women did (F(5,337) = 3.48, $p < .01$). From 30 years of age the distribution of self-reported health showed no deviation from linearity for women (F(4,283) = .66).

VI.2. Interpersonal assets

Social network is a crucial concept in social gerontology. It has been shown repeatedly that the strength of the social network is related to normative adaptation in terms of, for example, activity level, loneliness and life satisfaction. The variables selected to exemplify the interpersonal assets were: marital status, having children, and frequency of interaction with relatives, friends and acquaintances.

VI.2.1. Marital status

In the total sample 61% were married or cohabiting with a person of the other sex, 25% were single, 5% divorced and 9% widowed. This variable has low scaling quality. It will only be used dichotomized within the two groups married; i.e., married or cohabiting, and not married; i.e., single, divorced or widowed.

VI.2.2. Number of children

About one third of the persons in the total sample had no children, about half had one or two children, 12% had three children and the remaining 6% had more than three children. About two thirds of the participants had no children living with them. That means that about half of the participants with children did not live with these. The other half lived with at least one of their children.

VI.2.3. Frequency of interaction

Forty-one percent of the participants interacted daily with relatives, friends or acquaintances, another 31% reported that they interacted with relatives, friends or acquaintances many times a week, and 18% interacted about once a week. The remaining 10% interacted with relatives, friends and acquaintances about once every fortnight or more seldom.

VI.2.4. Primary social network

The three variables concerning marital status, having children and frequency of interaction were dichotomized and added to an index of primary social network. Marital status was divided into married, scoring one point, versus not married, scoring zero; having children scored one point, and so did daily interaction with relatives, friends or acquaintances.

In the case of marital status qualitative criteria were considered in the dichotomization; married scored one point and single, divorced or widowed scored zero. The same was the case for the variable having children; where those who had one or more children scored one point and those who had no children scored zero. The cutting point for the variable frequency of interaction was chosen at daily interaction to be in some sort of agreement on "primarity level" with the two other variables. The cutting point at daily interaction further divides the sample into two halves with as nearly as possible an equal number of persons in each half. The percentage who scored one point on the dichotomous variables that measure primary social network in each age-cohort is shown in Figure 9.

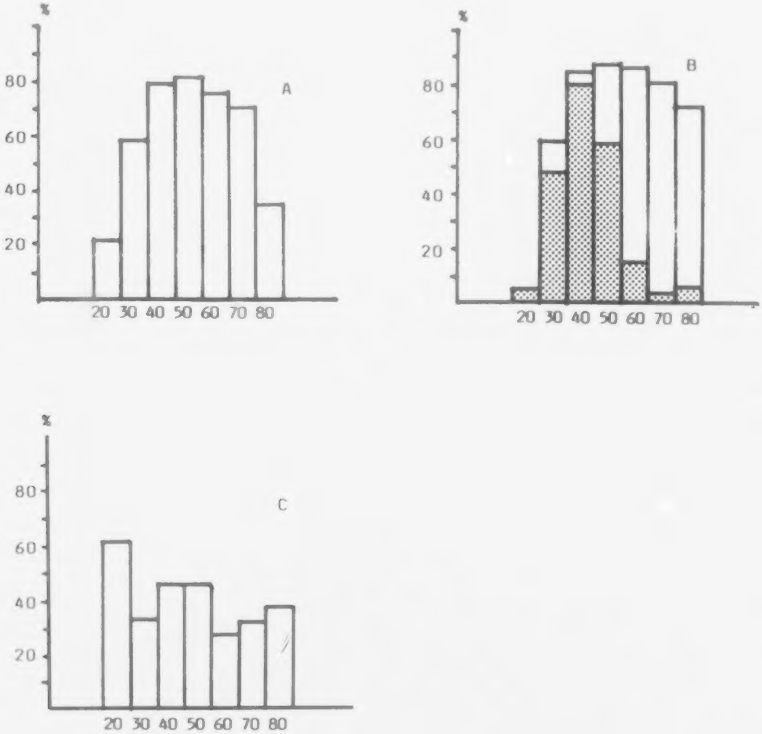


Figure 9. Percent in the different age-cohorts of
A) married or cohabiting with a person of the other sex,
B) having children (shadowed, having children living at home)
C) daily interaction with relatives, friends or acquaintances.

The three variables added together give an index of primary social network. This varies between no points and three points, with more points indicating a stronger primary social network (Table 5).

Table 5. The distribution of primary social network in percent in the total sample

Points	0	1	2	3	$\bar{x}$	S.D.	N
Primary social network	19	20	40	21	1.6	1.0	627

About one fifth scored full points and another one fifth scored no points at all on the index of primary social network.

VI.2.5. Primary social network in the different age-cohorts

The mean scores on the primary social network index has been computed for the different age-cohorts (Table 6).

Table 6. Distribution on the primary social network index in percent in the different age-cohorts

Age-cohorts	20	30	40	50	60	70	80	Total
0	21	25	10	4	18	22	39	19
1	58	17	11	14	6	7	26	20
2	17	41	43	50	54	46	23	40
3	4	17	36	32	22	25	12	21
$\bar{x}$	1.1	1.5	2.0	2.1	1.8	1.7	1.1	1.6
S.D.	.7	1.1	.9	.8	1.0	1.1	1.1	1.0
N	97	95	95	97	89	89	65	627

A majority of the participants scored one point or less in the youngest and oldest age-cohort. The distribution showed a significant deviation from linearity ($F(5,627) = 20.08$ $p < .001$), peaking for the fifty-year-old cohort. This is illustrated in Figure 10.

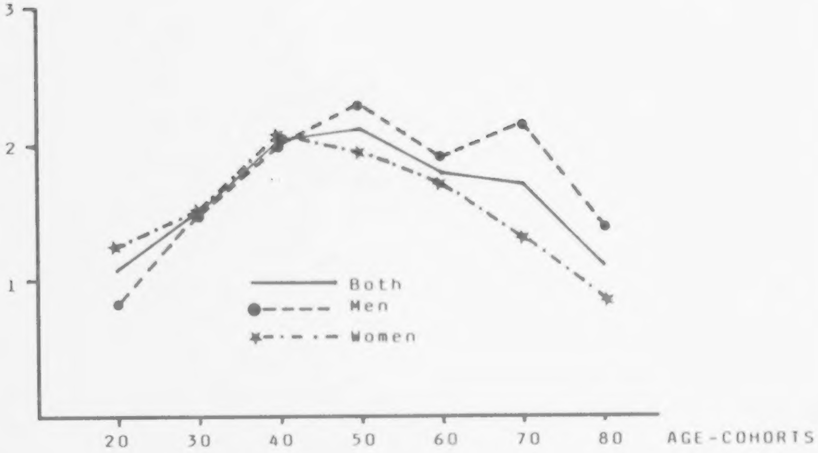


Figure 10. Mean primary social network for men, women and both sexes in the different age-cohorts.

The curve for women shows a downward slope that does not deviate from a linear one from the 40-year-old cohort upwards ($F = (3,233) = .87$). The curve for the men deviates significantly from linearity from the 40-year-old cohort and older ($F(3,201) = 3.48$, $p < .05$) as well as for the 50-year-old cohort and older ($F(2,158) = 3.09$, $< .05$). The combined curve for both sexes shows no significant deviation from linearity from the 50-year-old cohort and upwards ($F(2,340) = 2.60$).

VI.3. Institutional assets

As has been discussed, institutional assets are a reflection of social position. In social gerontology, the considerations of social position in old age are often discussed. Social position is a stratifying concept and has thus attracted interest in sociology and social gerontology. In this study, social position is measured by educational level, socioeconomic classification and income.

VI.3.1. Educational level

About one third of the participants had only six years of elementary schooling and 4% not even this much. There were 15% that had comprehensive schooling and 4% folk high school. Another 22% had 2 years vocational schooling and 13% theoretical secondary schooling. Finally, 9% had a university degree.

VI.3.2. Socioeconomic classification

The socioeconomic classification was done in accordance with SEI (SCB, 1982), the Swedish socioeconomic classification. The persons not at work were assigned to a group in accordance with their stated main occupation when working. The women who had mainly been housewives were assigned to their husbands' main occupation. As some housewives stated that their husbands had mainly been retirees, the number of missing cases in this variable was rather high, 13% compared to the usual 5 to 7%.

In the total sample 49% of the respondents were classified as manual workers (9% unskilled employees in goods production, 24% unskilled employees in service production, 10% skilled employees in goods production and 6% skilled employees in service production), there were 48% who were classified as non-manual employees (20% assistant non-manual employees, 19% intermediate non-manual employees and 9% employed and self-employed professionals, higher civil servants and executives). The remaining 3% were self-employed (other than professionals). Only 4 persons were farmers or former farmers. This low number is obviously due to the fact that the sampling was done in the central parishes of Jönköping.

VI.3.3. Income

Income was measured by means of two questions with fixed alternatives for answers, asked of married and not married participants. The questions were directed towards yearly income in the household as an economic entity. Married people could thus have their income influenced by their partners' income.

Among not married persons 44% had an annual income of less than SEK 50,000, (SEK = Swedish Crowns, each about US$ .15) 25% had between SEK 50,000 and SEK 75,000, 22% had between SEK 75,000 and SEK 100,000 and 9% more than SEK 100,000. Among the married the annual income in the family was below SEK 75,000 for 17%, 16% had between SEK 75,000 and SEK 100,000, 36% between SEK 100,000 and SEK 150,000 and 31% had an annual income of more than SEK 150,000 in the family.

VI.3.4. Social position

The three variables dealing with educational level, socio-economic classification and income were dichotomized and added to form an index. In these variables it is more difficult to put the cutting points according to some qualitative criteria than in the case of self-reported health and primary social network. I suspect, like Galtung (1964), that the cutting points should be rather high if the index really is to reflect institutional assets.

Educational level was dichotomized so that theoretical secondary school or university degree scored one point. The persons who had two years of vocational schooling or less scored zero. The socioeconomic classification was dichotomized so that employed professionals, higher civil servants and executives, as well as self-employed professionals (except farmers or former farmers) scored one point. Manual workers together with assistant and intermediate non-manual employees scored zero. Income was dichotomized so that married people with an annual income of SEK 150,000 and above and not married ones with an income of SEK 100,000 and above scored one point. Family income less than SEK 150,000 for married and less than SEK 100,000 for not married gave zero points.

These criteria clearly disagree with the desire to get maximum discriminating power in the variables. Only 23% scored one point in the educational level variable, 12% scored one in the socioeconomic classification variable and 22% scored one point on income.

The percentages that scored one point on the dichotomized variables measuring social position in each age-cohort are shown in Figure 11.

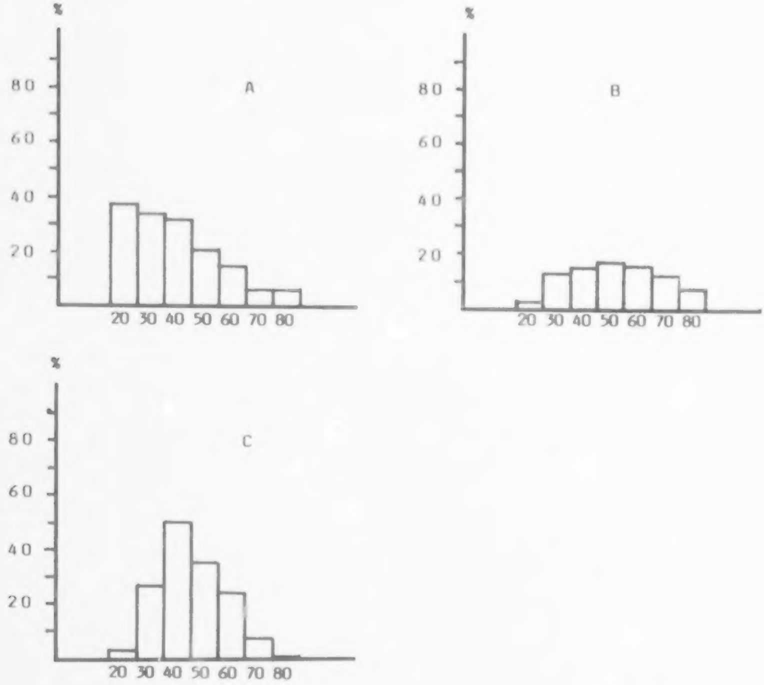


Figure 11. Percent in the different age-cohorts of
A) highly educated,
B) high work position according to the socioeconomic classification
C) high income (> SEK 150,000 annual income for married people and > SEK 100,000 annual income for not married ones).

When the dichotomized variables were added, the index of social position can take values from no points to three points, were more points are a sign of a stronger social position (Table 7).

Table 7. The distribution of social position in percent of the total sample.

Points	0	1	2	3	$\bar{x}$	S.D.	N
Social position	62	23	9	6	.6	.9	584

Almost two thirds of the total sample scored low on social position as measured here, 6% scored full points and thus showed a high social position.

VI.3.5. Social position in the different age-cohorts

Scores in social position index computed for the different age-cohorts produce Table 8.

Table 8. Points in the social position index in percent in the different age-cohorts.

Age-cohorts	20	30	40	50	60	70	80	Total
0	63	52	44	56	68	82	89	62
1	31	31	28	24	16	12	9	23
2	6	11	16	12	9	4	0	9
3	0	6	12	8	7	2	2	6
$\bar{x}$	.4	.7	.9	.7	.6	.3	.2	.6
S.D.	.6	.9	1.0	1.0	.9	.7	.5	.9
N	85	93	95	95	86	77	53	584

The distribution showed significant deviation from linearity (F(5,584) = 7.40, $p < .001$), peaking in the forty-year-old cohort.

The distribution of the social position index for the two sexes and the different age-cohorts is shown in Figure 12.

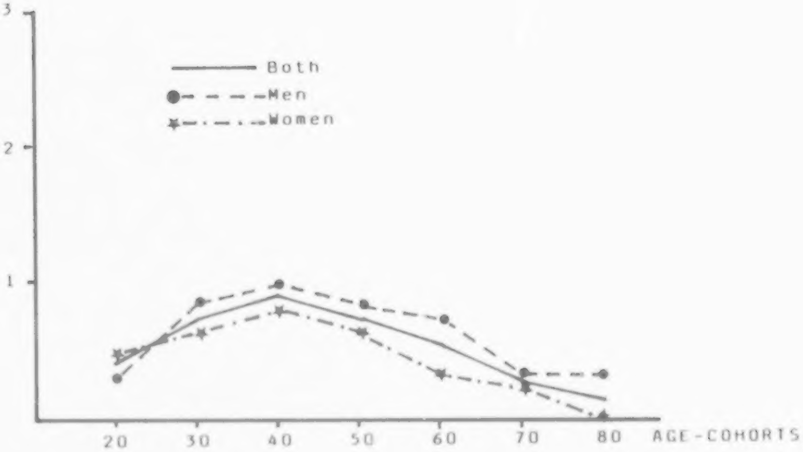


Figure 12. Mean social position in men, women and both sexes in the different age-cohorts.

The curve shows a downward slope that does not deviate from linearity from the 40-year-old cohort for both sexes (F(3,406) = .15), as well as for women (F(3,210) = .14) and men (F(3,195) = .45) separately.

VI.4. A factor analytic validation of the categorization of the assets

The exemplifications of individual, interpersonal and institutional assets chosen; namely, self-reported health, primary social network and social position did not show a linear development in the whole age range. As a result, the two youngest cohorts were dropped from the study. From the 40-year-old cohort and above, self-reported health and social position showed linearity for both sexes, and primary social network showed linearity for women. Primary social network never showed linearity for the men. Using only the 40-year-old cohort and above was regarded as a reasonable compromise between an attempt to retain as large a sample as possible and the statistical need for linearity.

The results to be presented from this point onwards in this study are thus based on the participants 40, 50, 60, 70 and 80 years old. With the chosen exemplification of assets, "gerontology" starts at age forty.

The variables used to create the indices of self-reported health, primary social network and social position were selected so as to together cover a distinct area of the three categories of assets, that is, individual, interpersonal and institutional ones. The variables partly overlap one another. It is reasonable to assume, for example, that a person with some stated diseases should be treated by a physician and/or take some medicines compared to a person who does not state any diseases. When added to indices this mutual conceptional area should give a more modulated view of the chosen categories.

The categorization was tested by factor analysis as a form of validation. The logic is that if a factor analysis groups together the variables used into factors that could be recognized as self-reported health, primary social network and social position, the suggested trichotomization would gain in credibility. The factor analysis is not used to test the quality of the variables but just as a test of the structure of three categories of actual assets with the variables used. The probability for the factor analysis to extract factors representing the three categories of assets is, of course, increased as the variables used originally were chosen because they were similar to each other.

The factor analysis was performed on data from the samples in the 40-year-old cohort and above with the nine variables selected to exemplify the three categories of assets. The undichotomized variables were used except for marital status where the dichotomized variable married vs. not married was used. The correlations between these variables are presented in Table 9.

Table 9. Correlations between the variables chosen to exemplify the three categories of actual assets.

	1	2	3	4	5	6	7	8	9
1. Number or deseases treated or controlled for	-								
2. Number of medicines	.70	-							
3. Number of diseases	.61	.54	-						
4. Educational level	.12	.17	.18	-					
5. Socioeconomic classification	-.03	.06	.05	.54	-				
6. Income	.32	.30	.30	.47	.38	-			
7. Number of children	-.05	.01	-.08	.02	-.01	.04	-		
8. Married or not	.07	.12	.13	.20	.11	-.01	.17	-	
9. Frequency of interaction	-.07	.06	-.06	-.17	-.13	-.10	.03	.05	-

The analysis was conducted by the Principal Component Method and then Varimax rotated (Norusis, 1986). The factor analysis extracted three factors described in Table 10.

Table 10. Factor loadings and communalities of the variables used to measure the different categories of assets.

	Factor I loadings	Factor II loadings	Factor III loadings	Com.
Number of diseases treated or controlled for	**.92**	-.04	.03	.85
Number of medicines	**.86**	-.08	-.07	.74
Number of diseases	**.85**	-.13	.01	.74
Educational level	-.10	**.84**	.02	.72
Socioeconomic classification	.02	**.83**	-.05	.69
Income	-.34	**.69**	.24	.64
Number of children	.10	-.02	**.74**	.55
Married or not	-.15	.26	**.67**	.54
Frequency of interaction	.01	-.36	**.41**	.29

The Eigenvalues and percentages of common factor variance for Factor I were: 2.89; 32%, for Factor II: 1.69; 19%, and for Factor III: 1.19; 13%.

Factor I primarily represents self-reported health, Factor II primarily social position and Factor III primary social network. Income shows some interference with Factor I (self-reported health), and frequency of interaction shows some interference with Factor II (social position). The main impression is however that the factor analysis seems to support the suggested trichotomization.

VI.5. The actual assets in the 40-year-old cohort and older

There were significant negative correlations between the age-cohorts and the three categories of assets for men as well as women. Table 11.

Table 11. The correlations between age-cohorts 40 + and self-reported health, primary social network and social position for men, women, and both sexes.

	Self-reported health		Primary social network		Social position	
	r	eta	r	eta	r	eta
Men	-.40***	.40	-.17***	.28	-.26***	.27
Women	-.47***	.48	-.39***	.41	-.37***	.37
Both sexes	-.44***	.44	-.29***	.32	-.30***	.31

*** p < .001, ** p < .01, * p < .05

The differences between the r- and eta-coefficients were small except for the correlation between age-cohorts 40 + and primary social network for men and for both sexes, which is to say that a lack of linearity remains.

One analysis of variance with age-cohorts 40-80 and sex as independent variables was conducted for each of the different categories of assets, that is, self-reported health, primary social network and social position. These analyses of variance showed age-cohorts to have a significant main effect on self-reported health ($F(4,440) = 25.89$, $p < .001$) but not sex ($F(1,440) = 2.82$). The two-way interaction effect between age-cohorts and sex was also insignificant $F(4,440) = .22$. The self-reported health was lower in older age-cohorts.

Age-cohorts had a significant main effect on primary social network ($F(4,434) = 13{,}37$, $p < .001$) and so had sex ($F(1,434) = 15.56$, $p < .001$). The two-way interaction effect between age-cohort and sex was not significant $F(4,434) = 2.39$. The primary social network was weaker in older age-cohorts, and the primary social network was weaker for women in the age-cohorts 40 years of age and older.

Age-cohorts had a significant main effect on social position ($F(4,403) = 10.68$, $p < .001$) and so had sex ($F(1,403) = 4.60$, $p < .05$), but the two-way interaction effect of age-cohort and sex had no significant effect on social position $F(4,403) = .49$. The social position was lower in older age-cohorts and for women.

In the total sample of persons 40 to 80 years old there were significant but rather low correlations between the three categories of assets. Self-reported health correlated ($r = .16$, $p < .001$) with primary social network and ($r = .20$, $p < .001$) with social position. Primary social network correlated ($r = .22$, $p < .001$) with social position.

For men self-reported health correlated with social position ($r = .16, p < .05$) but not with primary social network ($r = .\text{-}01$), neither did primary social network correlate with social position ($r = .08$). For women self-reported health correlated with primary social network ($r = .27, p < .001$) and social position ($r = .25.p < .001$). Primary social network correlated with social position ($r = .33, p < .001$).

VI.6. The first step in the path analyses

It is possible to summarize the results in this chapter as the first steps in the path analyses. In these first steps the correlation coefficients are given. The empirical model could thus be supplemented with values as in Figure 13.

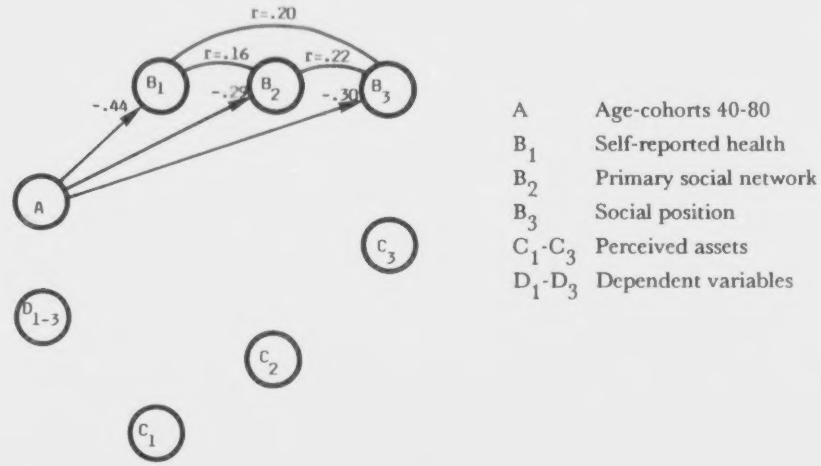
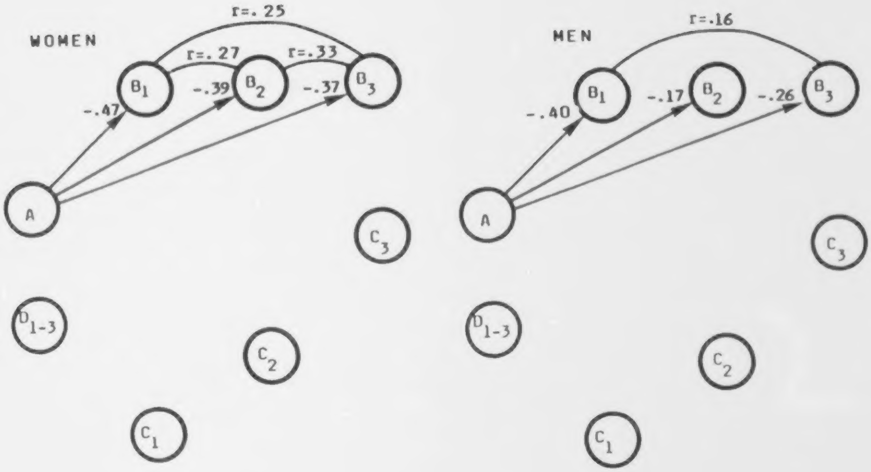

r=.20
r=.16
r=.22
-.44
-.29
-.30
B_1
B_2
B_3
A
C_3
D_{1-3}
C_2
C_1
A Age-cohorts 40-80
B_1 Self-reported health
B_2 Primary social network
B_3 Social position
C_1-C_3 Perceived assets
D_1-D_3 Dependent variables

Figure 13. The path analysis after step one

The correlations between the three categories of assets are all positive. There are also, as suggested, significant negative paths between age-cohorts and each of the three categories of assets. The statistical demand for linarity increases the strength of the correlations but the negative direction is explained by the variables chosen to form the indices of self-reported health, primary social network and social position. The figures for the separate sexes are shown in Figure 14.



A	Age-cohorts 40-80	C_1-C_3	Perceived assets
B_1	Self-reported health	D_1-D_3	Dependent variables
B_2	Primary social network		
B_3	Social position		

Figure 14. The path analysis for women and men after step one.

The inter-correlations between the three categories of actual assets are more predominant for women. As they were not regarded as necessary, I will not comment on them except to note that, when significant, they are positive.

The earlier presented analysis of variance showed that sex had a main effect on primary social network and on social position. When the differences in the strength of the correlations were distinctly tested, however, only the difference concerning the correlations between age-cohorts and primary social network were significant ($Z = 2.48$, $p < .05$). The primary social network is weaker in older age-cohorts and more so for the women. The differences between the two other correlations were not significant (age-cohort and self-reported health, $Z = 1.01$ and age-cohort and social network $Z = 1.22$).

Chapter VII.

RESULTS: the perceived assets

To each category of actual assets two questions were asked in order to get a picture of how these actual assets were perceived. These questions dealt with perceived health, perceived ego-strength, perceived quality of social network, perceived power in social network, perceived economic situation and perceived social power. It is obvious that there was no perfect correspondence between the actual assets and the questions that dealt with the way they were perceived. The questions concerning the perception of the actual assets were dichotomized and added to indices of perceived individual assets, perceived interpersonal assets and perceived institutional assets.

VII.1. Perceived individual assets

An index of perceived individual assets was constructed from questions about perceived health and perceived ego-strength. Just over half, or 52% of the sample in the 40-year-old cohort and older perceived their health as good. Another 44% perceived their health as fairly good, 3% thought their health was fairly poor and 1% perceived their health as poor.

Two questions were asked about perceived ego strength, one dealt with feelings of insufficiency and weakness, and one was formulated "Do you feel assured and strong". The responses to these items correlate significantly ($r = .46$, $p < .001$) and are added together and divided by two giving a mini scale of perceived ego strength with scores ranging from one to four, where higher scores point to stronger ego strength. The distribution in percent in the 40-year-old cohort and older is shown in Table 12.

Table 12. The distribution of perceived ego-strength in percent among the 40-year-old cohort and older.

Perceived ego-strength	1	1.5	2	2.5	3	3.5	4	$\bar{x}$	S.D.	N
	1	3	16	31	31	12	6	2.7	.6	430

About half of the persons scored 3 or more points on the perceived ego strength variable. Before being added to an index of perceived individual assets, the two variables were dichotomized. The leading principle in this dichotomization was to splitt he sample into two halves with as closely as possible equally many people in each half.

Perceived health was dichotomized with persons perceiving their health as "good" in one group receiving one point. Persons who perceived their health with any restriction, that is, persons who perceived their health as "bad", "fairly bad" or "fairly good", scored zero. The variable perceived ego strength was divided into a "high" group with 3.0 or more on the "mini-scale" receiving one point and a lower group with 2.5 or less in perceived ego-strength receiving no points.

When these two variables are added they constitute an index of perceived individual assets that can take values from 0 to 2, where more points is a sign of higher perceived individual assets.

This index of perceived individual assets correlates significantly with age-cohorts ($r = -.15$, $p < .01$; Eta = .16) indicating lower perceived individual assets in older age-cohorts. Perceived individual assets also correlate with sex ($r = .21$, $p < .001$) indicating lower perceived individual assets among women. This pattern was confirmed in an analysis of variance showing age-cohorts ($F(4,428) = 3.00$, $p < .05$) as well as sex ($F(1,428) = 19.36$, $p < .001$) to have significant main effects on perceived individual assets. There was no significant two-way interaction effect of age-cohorts and sex ($F(4,428) = .99$) on the index of perceived individual assets (Figure 15).

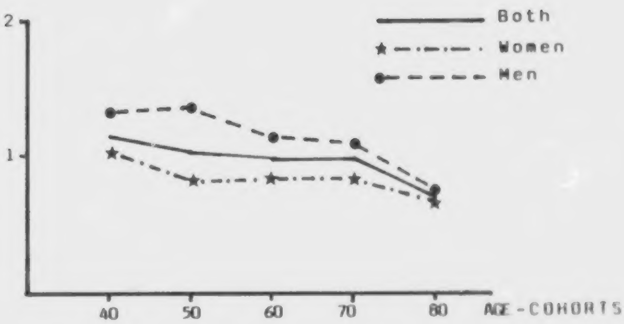


Figure 15. Mean perceived individual assets in the different age-cohorts of men, women and both sexes.

The correlations between perceived individual assets and the different categories of actual assets are shown in Table 13.

Table 13. Correlations between perceived individual assets and the three categories of actual assets.

	Self-reported health	Primary social network	Social position
Perceived individual assets	.42***	.17***	.16***

*** $p < .001$, ** $p < .01$, * $p < .05$

Perceived individual assets correlated significantly with all three categories of actual assets. The correlation between perceived individual assets and self-reported health was significantly higher than the correlation between perceived individual assets and primary social network ($t = 4.09$, d.f. = 392, $p < .001$) and social position ($t = 4.69$, d.f. = 392, $p < .001$).

An analysis of variance was conducted with self-reported health, primary social network and social position as independent variables and perceived individual assets as the dependent one. This analysis showed that only self-reported health had a significant main effect on perceived individual assets ($F(3,395) = 24.91$, $p < .001$). Neither primary social network

(F(3,395) = 2.55) nor social position (F(3,395) = 2.50) showed any significant main effect on perceived individual assets. There were also no significant two-way interaction effects on perceived individual assets. (Self-reported health x primary social network F(9,395) = .80, self-reported health x social position F(9,395) = .63, primary social network x social position F(9,395) = .80). The three-way interaction effect was also insignificant F(13,395) = 1.52.

VII.2. Perceived interpersonal assets

An index of perceived interpersonal assets was constructed from a couple of items measuring perceived quality in social network and perceived power in social network. Of the persons in the age-cohorts 40 years old and older, 76% stated that they, to a high extent, had good contacts in the social network. Only two persons or less than 1% thought that they did not have at all good contact with relatives, friends and acquaintances. In between these extremes, 18% stated that they had to some extent good contacts with relatives, friends and acquaintances and 5% had difficulties deciding whether they had good contact or not.

Forty-five percent thought that they had, to a high extent, persons around them who minded what they said or felt, and 48% stated this to be the case to some extent. Further, there were 5% who stated that they hardly had and 2% that they did not at all have persons around them who took account of what they said or felt.

Before being added to an index of perceived interpersonal assets the two variables were dichotomized. As with perceived individual assets, the leading principle in this dichotomization was to split the sample into two halves with as closely as possible an equal number of people in each half.

Perceived quality of contacts in social network was dichotomized with persons who stated that they had to a high extent good contact with relatives, friends and acquaintances forming one group receiving one point. Those persons who stated any restriction to this good quality of contacts in social network received no points.

Perceived power in the social network was dichotomized in the same manner. Those who felt that they had, to a high extent, persons around them who took account of what they said and felt received one point; those who stated any restriction scored zero.

When these two variables are added they constitute an index of perceived interpersonal assets that can take values from 0 to 2, where more points is a sign of higher perceived interpersonal assets.

This index of perceived interpersonal assets did not correlate significantly with age-cohorts ($r = -.06$, $Eta = .07$) but showed some correlations with sex ($r = .08$, $p < .05$) indicating lower perceived interpersonal assets among men. An analysis of variance showed neither age-cohorts ($F(4,435) = .53$) nor sex ($F(1,435) = 2.93$) to have any main effect on perceived interpersonal assets. The two-way interaction effect (age-cohort x sex, $F(4,435) = .97$) was also insignificant (Figure 16).

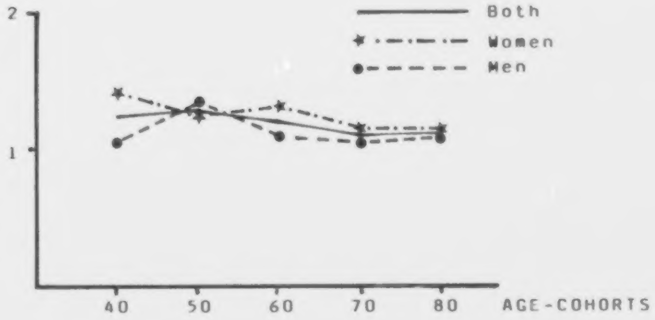


Figure 16. Mean perceived interpersonal assets in the different age-cohorts of men, women and both sexes.

The correlations between perceived interpersonal assets and the different categories of actual assets are shown in Table 14.

Table 14. Correlations between perceived interpersonal assets and the three categories of actual assets.

	Self-reported health	Primary social network	Social position
Perceived interpersonal assets	.09*	.23***	.19***

*** $p < .001$, ** $p < .01$, * $p < .05$

The correlation between perceived interpersonal assets and primary social network was significantly stronger than the correlation between perceived interpersonal assets and self-reported health ($t = 2.39$, d.f. 399, $p < .01$). There was no significant difference between the correlation of perceived interpersonal assets with primary social network compared to the correlation with social position ($t = .84$, d.f. 399).

An analysis of variance was conducted with self-reported health, primary social network and social position as independent variables and perceived interpersonal assets as dependent. The analysis showed that self-reported health had no significant effect on perceived interpersonal assets ($F(3,402) = 1.31$). Primary social network ($F(3,402) = 9.27$, $p < .001$) and social position ($F(3,402) = 2.95$, $p < .05$) had both significant main effects on perceived interpersonal assets. There was also a significant two-way interaction effect of primary social network and social position on perceived interpersonal assets $F(9,402) = 2.20$, $p < .05$. (Figure 17).

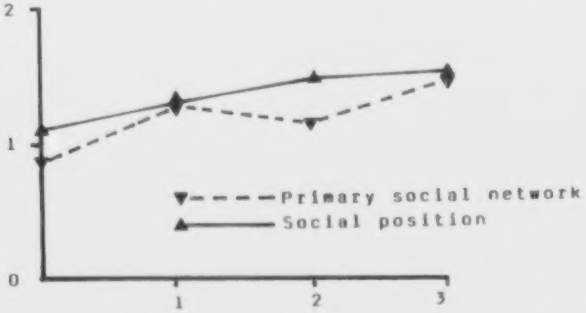


Figure 17. Mean perceived interpersonal assets for the different scores on primary social network and social position.

The interaction effect could primarily be interpreted as a sign of the significant deviation from linearity perceived interpersonal assets showed across the different scores of primary social network ($F(2,433) = 4.55$, $p < .05$).

There was no other significant two-way interacting effect on perceived interpersonal assets (self-reported health x primary social network $F(9,402) = .99$, self-reported health x social position $F(9,402) = 1.05$). The three-way interaction effect was also insignificant $F(13,402) = 1.43$.

VII.3. Perceived institutional assets

Parallel to the indices of perceived individual and perceived interpersonal assets the index of perceived institutional assets was constructed by adding scores from two variables. One question dealt with perceived finances and one with perceived social power. Eight percent of the participants thought that their financial situation to a high extent prevented them from doing what they wanted and 35% thought that their financial situation did to some extent. Thirty-six percent found that their financial situation hardly prevented them from doing what they wanted, and 21% thought that their financial situation did not at all prevent them from doing this.

Concerning the perceived social power, 14% thought that authorities or the like do not at all mind what they say or feel. Forty-four percent stated that authorities hardly mind. Another 39% thought that authorities to some extent take account of what they say or feel and 3% thought they do to a high extent.

The two variables were dichotomized and added to an index of perceived institutional assets. As with perceived individual assets and perceived interpersonal assets, the guiding principle in this dichotomization was to split the sample into two halves with as closely as possible an equal number of people in each half.

Participants stating that their financial situation hardly or not at all prevented them from doing what they wanted to, scored one point. Those who thought that it did so to some or to a high extent, scored zero. Perceived social power was dichotomized into those who stated that authorities to some or to a high extent take account of what they say or feel, receiving one point. Those who stated that authorities hardly or not at all mind, scored zero.

These two dichotomized variables were added to an index of perceived institutional assets. Perceived institutional assets can accordingly get values from 0 to 2, where more points is a sign of higher perceived institutional assets.

Perceived institutional assets correlated low but statistically significantly with age-cohorts (r = .09, p < .05, Eta .11), indicating higher perceived institutional assets in older age-cohorts. There was no significant difference between the sexes in their perception of institutional assets (r = -.04). An analysis of variance was conducted with age-cohorts and sex as independent variables and perceived institutional assets as the dependent one. This analysis showed neither age-cohorts F(4,430) = 1.20, nor sex F(1,430) = .63, to have significant main effects on perceived institutional assets. The two-way interaction effect was not significant either (F (4,430) = .71) (Figure 18).

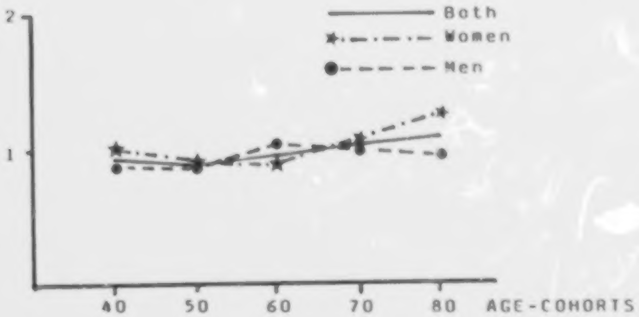


Figure 18. Mean perceived institutional assets in the different age-cohorts of men, women and both sexes.

Among the actual assets perceived institutional assets correlated significantly only with social position (Table 15).

Table 15. Correlations between perceived institutional assets and the three categories of actual assets.

	Self-reported health	Primary social network	Social position
Perceived institutional assets	.04	.03	.17***

*** $p < .001$, ** $p < .01$, * $p < .05$

The correlation between perceived institutional assets and social position was significantly higher than the correlation between perceived institutional assets and self-reported health ($t = 2.07$, d.f. 394, $p < .05$) as well as the correlation between perceived institutional assets and primary social network ($t = 2.23$, d.f. 394, $p < .05$).

An analysis of variance was conducted with self-reported health, primary social network and social position as independent variables and perceived institutional assets as the dependent variable. The analysis showed only social position to have a significant main effect on perceived institutional assets ($F(3,397) = 3.35$, $p < .05$). Neither self-reported health ($F(3,307) = .36$) nor primary social network ($F(3,397) = .48$) had any significant main effect on perceived institutional assets. There were also no significant two-way interaction effects on perceived institutional assets (self-reported health x primary social network $F(9,397) = .55$, self-reported health x social position $F(9,397) = .42$, primary social network x social position $F(9,397) = 1.07$. The three-way interaction effect was also not significant $F(13,397) = .49$.

VII.4. The second step in the path analyses

The different categories of perceived assets showed positive correlations with each other. Perceived individual assets correlated with perceived interpersonal assets ($r = .22$, $p < .001$) and with perceived institutional assets (r = .16, p < .001). Perceived interpersonal assets correlated with perceived institutional assets (r = .20, p < .001).

The second step of the path analyses was taken by means of three multiple regression analyses. Age-cohorts, self-reported health, primary social network and social position were used as independent variables. In three different regression analyses, perceived individual assets, perceived interpersonal assets, and perceived institutional assets were used as dependent variables (Table 16).

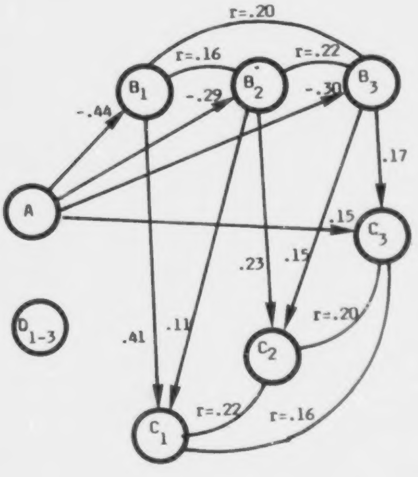
Table 16. Multiple regression analyses on the three categories of perceived assets with the actual assets and age-cohorts as independent variables.

	Variables in	Cum R^2	Beta
Perceived individual assets	Age-cohorts	.01	(.08)
	Self-reported health	.18	.41***
	Primary social network	.19	.11*
	Social position	.19	(.08)
Perceived interpersonal assets	Age-cohorts	.00	(.05)
	Self-reported health	.01	(.05)
	Primary social network	.06	.23***
	Social position	.08	.15**
Perceived institutional assets	Age-cohorts	.02	.15**
	Self-reported health	.03	(.08)
	Primary social network	.03	(.03)
	Social position	.06	.17***

*** p < .001, ** p < .01, * p < .05

The regression analyses showed self-reported health to be the strongest contributor to the variance in perceived individual assets. Primary social network contributed strongest to the variance in perceived interpersonal assets. Social position was the strongest contributor to the variance in perceived institutional assets. This was in line with the suggested model. It was obvious however that the contribution of the variables inside the model to the variance in the different categories of perceived assets was low. This was especially true concerning perceived institutional assets and perceived interpersonal assets.

The values, correlations and beta coefficients, which can be entered into the model are shown in Figure 19.



A	Age-cohorts 40-80
B_1	Self-reported health
B_2	Primary social network
B_3	Social position
C_1	Perceived individual assets
C_2	Perceived interpersonal assets
C_3	Perceived institutional assets
D_1-D_3	Dependent variables

Figure 19. The empirical model after step two of the path analyses.

When the both sexes were analysed separately, for women perceived individual assets correlated with perceived interpersonal assets ($r = .30, p < 001$) and with perceived institutional assets ($r = .21, p < .001$). Perceived interpersonal assets correlated with perceived institutional assets ($r = .29, p < .001$). For men perceived individual assets correlated with perceived interpersonal assets ($r = .19, p < .01$) and with perceived institutional assets ($r = .12$, $p < .05$). Perceived interpersonal assets did not correlate significantly with perceived institutional assets, ($r = .08$).

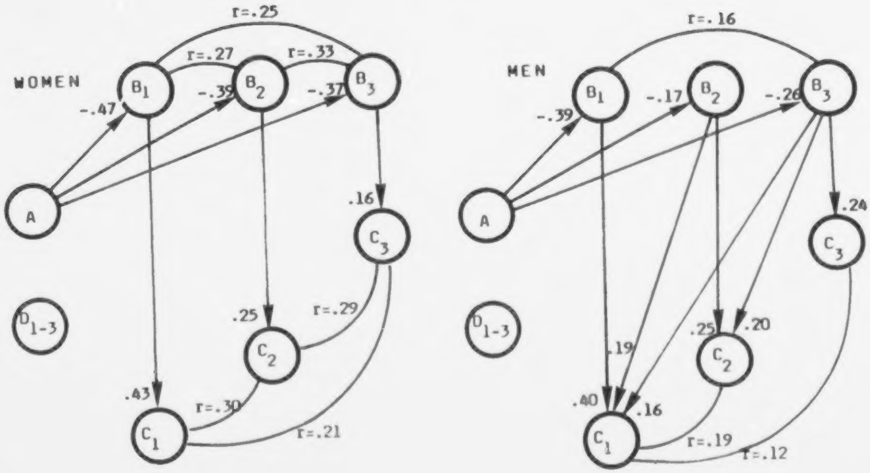
Table 17 shows the beta coefficients for men and women. Three different regression analyses were conducted for each sex with perceived individual assets, perceived interpersonal assets, and perceived institutional assets as dependent variables. As independent variables age-cohorts, self-reported health, primary social network, and social position were used.

Table 17. Multiple regression analyses for women and men on the three categories of perceived assets with actual assets and age-cohorts as independent variables.

		Women		Men	
	Variables in	Cum R^2	Beta	Cum R^2	Beta
Perceived individual assets	Age-cohorts	.01	(.13)	.00	(.01)
	Self-reported health	.19	.43***	.16	.40***
	Primary social network	.19	(.03)	.20	.19**
	Social position	.19	(.02)	.22	.16*
Perceived interpersonal assets	Age-cohorts	.00	(.07)	.01	(.08)
	Self-reported health	.01	(.05)	.01	(.05)
	Primary social network	.07	.25***	.07	.25***
	Social position	.08	(.12)	.11	.20**
Perceived institutional assets	Age-cohorts	.01	(.11)	.02	(.13)
	Self-reported health	.02	(.11)	.02	(.06)
	Primary social network	.03	(.10)	.02	(-.02)
	Social position	.05	.16*	.08	.24***

*** $p < .001$, ** $p < .01$, * $p < .05$

As mentioned, the independent variables were entered into the equation in accordance with the strength of the correlations. In the regression analysis on perceived institutional assets for women, age-cohorts was entered first as a non-significant variable. After age-cohorts was entered social position turned out significant. All beta coefficients, although often with insignificant strength, showed the expected sign, except for the impact of primary social network on perceived institutional assets for men. Figure 20 shows the path diagrams for men and women after step two in the path analyses.


WOMEN
r=.25
r=.27
r=.33
B1
B2
B3
-.47
-.39
-.37
A
.16
C3
D1-3
.25
r=.29
C2
.43
r=.30
C1
r=.21
MEN
r=.16
B1
B2
B3
-.39
-.17
-.26
A
.24
C3
D1-3
.25
.20
.19
C2
.40
.16
C1
r=.19
r=.12

A	Age-cohorts 40-80	C_1	Perceived individual assets
		C_2	Perceived interpersonal assets
B_1	Self-reported health	C_3	Perceived institutional assets
B_2	Primary social network		
B_3	Social position	D_1-D_3	Dependent variables

Figure 20. The empirical model for women and men after step two of the path analyses.

There were a larger number of significant paths between the actual and perceived assets among men than among women. Among women the hypothesized path between social position and perceived institutional assets did not materialize until after the non-significant impact of age-cohorts was introduced into the equation. For women the paths look very much as suggested by the empirical model. For men primary social network has an additive impact on perceived individual assets. Social position has an additive impact on perceived individual assets and on perceived interpersonal assets. For women as well as men the essential features of the structure of the empirical model seems visible up till now.

Chapter VIII.

RESULTS:
the dependent variables

In this chapter, the dependent variables are presented. These variables were perceived activity level, loneliness and life satisfaction.

For practical reasons it was impossible to use long, elaborate scales, which is especially obvious with respect to perceived activity level and life satisfaction. Loneliness was measured by means of a scale of a few items.

VIII.1. Perceived activity level

It will be obvious from chapters II to IV that activity and levels of activity have attracted a great deal of interest in socio-gerontological research and literature. The two predominant social gerontological approaches and moreover the ones primarily created to understand social gerontological phenomena are based on activity. In this study, activity was treated as a dependent variable. Activity level was assumed to be dependent on access to different categories of actual assets and on the way the access to these assets was perceived.

In the present study, activity was measured by means of three items. One concerned activities the subjects do on their own. A second concerned activities together with close relatives and friends and the final one activities which are formally organized. The three items are all meant to measure perceived activity level.

The different kinds of activities were distributed as shown in Table 18 in the sample of the 40-year-olds and older.

Table 18. The distribution on the three types of activities in percent of the sample 40-year-olds and older.

	Large Extent (3)	Rather Large Extent (2)	Rather Low Extent (1)	Low Extent (0)	$\bar{x}$	S.D.	N
Activities you do by yourself	22	54	19	5	1.9	.8	436
Activities together with close relatives, friends etc	19	42	30	9	1.7	.9	437
Formally organized activities	8	23	32	37	1.0	1.0	435

The participants most frequently thought that they were occupied by activities they did by themselves. That is, the mean for the item about activitties persons do on their own was higher than the mean for the item about activities together with close relatives, friends etc. ($t = 4.30$, D.F. = 434, $p < .001$) and formally organized activities ($t = 15.06$, D.F. = 433, $p < .001$). Activities together with close relatives, friends etc. were more often stated than participation in formally organized activities ($t = 14.07$, D.F. = 433, $p < .001$).

There was a statistically significant correlation between activities together with close relatives, friends etc. and participation in formally organized activities ($r = .38$, $p < .001$). Neither of these two kinds of activity was correlated with activities you do on your own. Activities you do on your own was not significantly correlated with activities together with close relatives, friends, etc., ($r = .08$) and also insignificantly correlated with formally organized activities ($r = -.05$).

The items were added together to form an index of perceived activity level. This perceived activity (PAL) can take values from 0 (to a low extent devoted to activities of any of the kinds mentioned) to nine (to a high extent devoted to activities of all three kinds). The distribution for PAL in the 40-year-old cohort and older is shown in Table 19.

Table 19. The distribution of PAL (perceived activity level) in percent in the 40-year-old cohort and older.

Score	0	1	2	3	4	5	6	7	8	9	x̄	S.D.	N
PAL	1	3	6	12	22	24	19	9	2	2	4.7	1.7	433

VIII.1.1. Perceived activity level in different age-cohorts

PAL showed a low but significant correlation with age-cohorts among the 40-year-olds and older ($r = -.11$, $p < .05$) indicating a somewhat lower perceived activity level in older age-cohorts.

The distributions of PAL in the different age-cohorts for the two sexes are shown in Figure 21. Sex is not correlated with PAL ($r = -.01$). For women the correlation between PAL and age-cohorts was low but significant $r = -.15$, $p < .01$. Men showed an insignificant correlation between PAL and age-cohorts $r = -.07$.

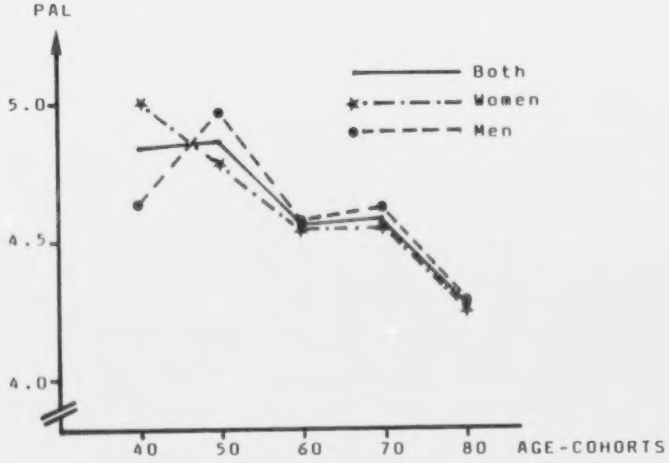


Figure 21. Mean perceived activity level (PAL) in different age-cohorts of men, women and both sexes.

An analysis of variance with age-cohorts and sex as the independent variables and PAL as the dependent variable showed that neither age-cohorts F(4,432) = 1.66 nor sex F(1,432) = .02 had a significant effect on PAL. The two-way interaction effect was also not significant (F(4,432) = .34).

VIII.1.2. Perceived activity level and actual assets

Among correlations between PAL and the actual assets, those with primary social network and social position were significant (Table 20).

Table 20. Correlations between PAL and the three categories of actual assets.

	Self-reported health	Primary social network	Social position
PAL	.04	.19***	.23***

*** p < .001, ** p < .01, * p < .05

This pattern of correlations was confirmed by means of an analysis of variance. Such an analysis was conducted with self-reported health, primary social network and social position as independent variables and PAL as the dependent one. The analysis showed a significant main effect of primary social network (F(3,399) = 3.90, p < .01) and social position (F(3,399) = 5.31, p < .001) on PAL. Self-reported health did not show any significant effect (F(3,399) = .35).

There were no two-way interaction effects (self-reported health x primary social network F(9,399) = .62, self-reported health x social position F(9,399) = 1.03 and primary social network x social position F(9,399) = 1.14). The three-way interacting effect was also not significant (F(13,399) = .37).

VIII.1.3. Perceived activity level and perceived assets

Perceived activity level showed significant correlations with all three categories of perceived assets (Table 21).

Table 21. Correlations between PAL and the three categories of perceived assets.

	Perceived individual assets	Perceived interpersonal assets	Perceived institutional assets
PAL	$.11^{**}$	$.29^{***}$	$.12^{**}$

$^{***}\ p < .001$, $^{**}\ p < .01$, $^{*}\ p < .05$

This pattern of correlations was, however, not confirmed by means of an analysis of variance. This analysis was carried out with perceived individual assets, perceived interpersonal assets and perceived institutional assets as independent variables and PAL as the dependent one. It showed only perceived interpersonal assets to be a significant main effect on PAL ($F(2,442) = 14.81$, $p < .001$). Neither perceived individual assets ($F(2,422) = .60$) nor perceived institutional assets ($F(2,422) = 1.33$) showed such a significant effect on PAL. The two-way interaction effects were not significant (perceived individual assets x perceived interpersonal assets $F(4,422) = 1.90$, perceived individual assets x perceived institutional assets $F(4,422) = .99$ and perceived interpersonal assets x perceived institutional assets $F(4,442) = .28$). The three-way interaction effect was also not significant ($F(8,442) = 1.90$).

VIII.1.4. Path analysis with perceived activity level as the dependent variable

It is now possible to continue with the final step in the path analysis with perceived activity level as the dependent variable. A multiple regression analysis was carried out with PAL as the dependent variable and age-cohorts, self-reported health, primary social network, social position, perceived individual assets, perceived interpersonal assets and perceived institutional assets as independent variables. The results of the analysis are summarized in Table 22.

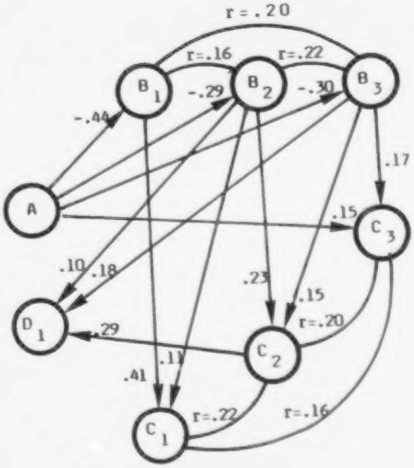
Table 22. Summary table of a multiple regression analysis on perceived activity level (PAL) with age-cohorts, actual assets and perceived assets as independent variables, showing direct and indirect effects.

	Direct Cum R^2	Beta	Indirect
Age-cohorts	.00	(-.05)	-.13
Self-reported health	.00	(-.03)	.09
Primary social network	.01	.10*	.12
Social position	.05	.18***	.09
Perceived individual assets	.05	(.03)	.07
Perceived interpersonal assets	.13	.29***	.02
Perceived institutional assets	.14	(.05)	.06

*** p < .001, ** p < .01, * p < .05

The analysis thus found three variables that significantly contributed to the variance of perceived activity level. The total contribution from the independent variables to the variance in PAL was 14%. The three significant variables directly contributed to 13% of the variance of the dependent variable. The non-significant contribution of self-reported health was in the wrong direction compared to the one suggested by the model.

Age-cohorts showed no significant direct impact on PAL. The indirect impact of age-cohorts on PAL was in the magnitude of -.13. In the actual assets there was an additive indirect impact in the magnitude of .09 for self-reported health. Primary social network showed an additive indirect impact in the magnitude of .12, and social position an additive indirect impact of .09. The direct influence on PAL via significant paths is shown in Figure 22.



A	Age-cohorts 40-80
B_1	Self-reported health
B_2	Primary social network
B_3	Social position
C_1	Perceived individual assets
C_2	Perceived interpersonal assets
C_3	Perceived institutional assets
D_1	Perceived activity level

Figure 22. Path diagram with perceived activity level as the dependent variable.

VIII.1.5. Path analyses of perceived activity level for men and women

Sex has in this study been used as a structural variable. The path analyses were carried out for two sexes separately with the same technique as was used for the total sample of 40 years old and older. A multiple regression analysis with PAL as the dependent variable was made with age-cohorts, self-reported health, primary social network, social position, perceived individual assets, perceived interpersonal assets and perceived institutional assets as independent variables. The impact of the model on perceived activity level for men and women is summarized in Table 23.

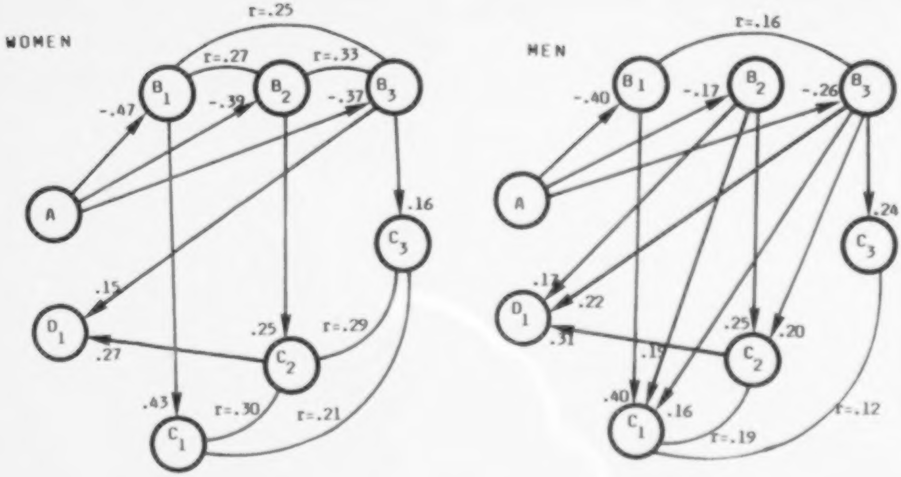
Table 23. Summary table for women and men of two multiple regression analyses on perceived activity level (PAL) with age-cohorts, actual assets, and perceived assets as independent variables, showing direct and indirect effects.

	Direct				Indirect	
	Women		*Men*			
	Cum R^2	Beta	Cum R^2	Beta	*Women*	*Men*
Age-cohorts	.01	(-.09)	.00	(-.02)	-.17	-.12
Self-reported health	.01	(.01)	.01	(-.07)	.09	.09
Primary social network	.01	(.02)	.03	.17*	.10	.11
Social position	.03	.15*	.08	.22**	.08	.12
Perceived individual assets	.03	(-.00)	.09	(.06)	.09	.07
Perceived interpersonal assets	.10	.27***	.18	.31***	.01	.02
Perceived institutional assets	.10	(.03)	.19	(.08)	.08	.03

*** $p < .001$, ** $p < .01$, * $p < .05$

The direct contribution of the variables in the model to the variance in PAL was low for the men, with a cumulative $R^2 = .19$, and even lower for the women with a cumulative $R^2 = .10$. For men the direct effect via significant paths was $R^2 = .17$ and for women $R^2 = .09$. For women the impact of perceived individual assets was in the wrong direction compared to the one suggested by the model and so was the impact of self-reported health for men.

For women the indirect impact of age-cohorts was in the magnitude of -.17 and for men -.12. The additive indirect effects from the actual assets were not impressive, either. The significant paths are summarized in Figure 23.


WOMEN
r=.25
r=.27
r=.33
-.47
-.39
-.37
B1
B2
B3
A
.16
C3
.15
D1
.27
.25
r=.29
C2
.43
r=.30
r=.21
C1
MEN
r=.16
-.40
-.17
-.26
B1
B2
B3
A
.24
C3
.17
.22
D1
.31
.25
.20
.15
C2
.40
.16
r=.19
r=.12
C1

A	Age-cohorts 40-80	C_1	Perceived individual assets
		C_2	Perceived interpersonal assets
B_1	Self-reported health	C_3	Perceived institutional assets
B_2	Primary social network		
B_3	Social position	D_1	Perceived activity level

Figure 23. Path diagrams with perceived activity level as the dependent variable for women and men.

VIII.2. Loneliness

As a second dependent variable, loneliness was used. As with activity level, loneliness was hypothesized to be dependent on access to actual assets and the perception of these actual assets. Particularly, it felt natural to think of an impact on feelings of loneliness as being tied to the strength of the primary social network and the perceived interpersonal assets.

In the present study, loneliness was measured by means of five items. One item was a global question about feelings of loneliness. The other four items were selected from the UCLA-loneliness scale (Russel, 1982) and formulated as questions instead of the original statements. The four questions concerned feeling part of a group of friends, knowing people to talk with, lacking companionship and feeling left out (see Appendix II).

All five items had a choice of four answer. Of the answers to the UCLA-scale questions, two were positively directed and two negatively. As to the global question, the answer "sometimes" was not used in this study. The reason for this was the vagueness in relation to frequency this word had shown in a secondary analysis of a study of in-movers to institutions for the care of the elderly (Johansson et al, 1979). Of the 372 persons answering the question: "Does it happen, you are bothered with feelings of loneliness", 58% answered "never". The remaining 42%, or 154 persons, could be analysed regarding what the answers stand for in terms of frequencies (see Table 24).

Table 24. Cross-tabulation of feelings of loneliness by frequency

	Bothered with feelings of loneliness			
Frequency	Always	Often	Sometimes	Seldom
Daily	11	20	5	
Many times a week	1	9	19	
Once a week		2	22	2
Every second week			8	
Once a month			11	2
More seldom (than once a month)			16	25

Of the 154 persons who answered anything beside "never" to the question about whether they were bothered with feelings of loneliness, more than half answered "sometimes". But this "sometimes" can mean anything from feeling lonely daily to less than once a month. Since it is impossible to find a compromise between clarity and comparability in this case, I have chosen clarity. Then there is the problem of comparability with other studies, and the low numbers of persons feeling lonely as indicated by the global question in this study is explained by the exclusion of "sometimes" as an alternative answer. The distribution of responses by the 40-year-olds and older in the questions about loneliness is shown in *Table 25*.

Table 25. The distribution of the five questions about loneliness in percent in the sample of 40-year-olds and older.

	Less Lonely			*More Lonely*			
	0	1	2	3	$\bar{x}$	S.D.	N
Bothered with feelings of loneliness A)	42	48	8	2	.7	.7	438
Feel as a part of a group of friends B)	48	45	6	1	.6	.6	436
Know people to talk to B)	65	33	1	1	.4	.5	436
Lack companionship C)	45	39	13	3	.7	.8	437
Feel left out C)	65	28	5	2	.4	.7	437

Alternative answers

A)	B)	C)
0) Never	0) Yes, to a high extent,	0) No, not at all
1) Seldom	1) Yes, to some extent	1) No, hardly
2) Often	2) No, hardly	2) Yes, to some extent
3) Always	3) No, not at all	3) Yes, to a high extent

The correlations between the questions about loneliness are shown in Table 26.

Table 26. Correlations between responses to the questions about loneliness

	Feel as a part of a group of friends	Know people to talk to	Lack companionship	Feel left out
Bothered with feelings of loneliness	.29***	.25***	.44***	.42***
Feel as a part of a group of friends		.49***	.36***	.31***
Know people to talk to			.31***	.22***
Lack companionship				.59***

*** p < .001, ** p < .01, * p < .05

The five items, seen as a loneliness scale, showed a reliability, measured by Cronbach's Alpha, of .74. The items added together give a scale with a range from zero to fifteen, with higher scores indicating more loneliness. The distribution in the sample of 40-year-olds and older is shown in Table 27.

Table 27. The distribution of the five question loneliness scale in percent of the sample of 40-year-olds and older

	0	1	2	3	4	5	6	7	8	9	10	11	x̄	S.D.	N
Loneliness	18	16	18	15	10	11	5	3	2	1	0	1	2.8	2.3	433

About half scored 2 points or less on the loneliness scale. Nobody scored more than eleven points, which still indicates a high degree of loneliness for some participants in the study.

The loneliness scale correlated with a question: "If you have a personal problem of some kind, do you know somebody you can talk to freely and honestly about these problems?" (r = .35, p < .001).

VIII.2.1. Loneliness in different age-cohorts

The loneliness scale showed a low but significant correlation with age-cohorts among those 40 years old and older (r = .12, p < .01) suggesting somewhat stronger feelings of loneliness in older age-cohorts. Sex also showed a significant correlation with loneliness (r = -.13, p < .01) suggesting somewhat stronger feelings of loneliness in women. In fact, the increased loneliness in older age-cohorts was only observable among the women, where loneliness correlated with older age-cohorts (r = .23, p < .001). Among the men, there was an insignificant correlation between loneliness and age-cohorts (r = -.02). The distributions of loneliness in the different age-cohorts for the two sexes are shown in Figure 24.

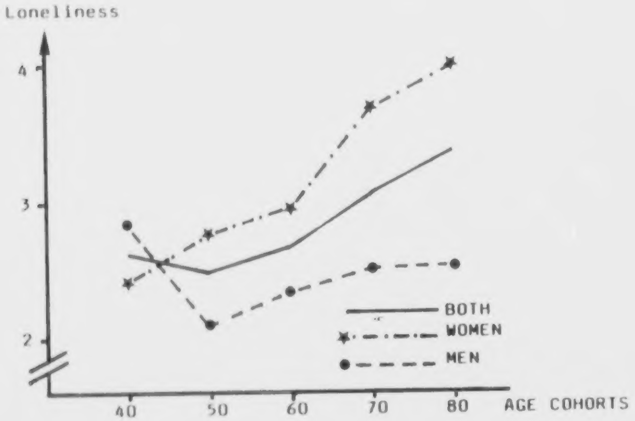


Figure 24. Mean loneliness scores in different age-cohorts of men, women and both sexes.

An analysis of variance with age-cohorts and sex as the independent variables and loneliness as the dependent one showed only sex to have a significant main effect on loneliness (F(1,432) = 7.78, p < .01). Age-cohorts showed no significant effect on loneliness (F(4,432) = 2.17). Although there seems to be a different pattern in the curves for men and women, the two-way interacting effect of sex and age-cohorts was not significant either (F(4,432) = 2.06).

An analysis of variance for women showed age-cohorts to have a main effect on loneliness F(4,221) = 3.29, $p < .05$.

VIII.2.2. Loneliness and actual assets

Loneliness correlated significantly with all three categories of actual assets (Table 28).

Table 28. Correlations between loneliness and the three categories of actual assets.

	Self-reported health	Primary social network	Social position
Loneliness	-.21***	-.34***	-.18***

*** $p < .001$, ** $p < .01$, * $p < .05$

This pattern of correlations was not fully confirmed in an analysis of variance with loneliness as the dependent variable and self-reported health, primary social network and social position as independent ones. The analysis showed primary social network (F(3,398) = 14.20, $p < .001$) and self-reported health (F(3,398) = 3.69, $p < .05$) to have a significant main effect on loneliness. The effect of social position on loneliness was, however, not significant (F(3,398) = 1.37). There were no significant two-way interaction effects (self-reported health x primary social network F(9,398) = .81; self-reported health x social position F(9,398) = .69; and primary social network x social position F(9,398) = .44). The three-way interaction effect was not significant (F(13,398) = .58) either.

VIII.2.3. Loneliness and perceived assets

As was the case with the actual assets, loneliness was correlated with all three categories of perceived assets (Table 29).

Table 29. Correlations between loneliness and the three different categories of perceived assets.

	Perceived individual assets	Perceived interpersonal assets	Perceived institutional assets
Loneliness	-.41***	-.46***	-.12**

*** $p < .001$, ** $p < .01$, * $p < .05$

An analysis of variance with perceived individual assets, perceived interpersonal assets and perceived institutional assets as independent variables and loneliness as the dependent one was carried out. This analysis showed perceived interpersonal assets (F(2,422) = 43.71, $p < .001$) and perceived individual assets (F(2,422) = 27.41, $p < .001$) to have significant main effects on loneliness. The effect of perceived institutional assets (F(2,422) = 1.78) was not significant, however. The two-way interaction effects were all insignificant (perceived individual assets x perceived interpersonal assets F(4,422) = 1.82; perceived individual assets x perceived institutional assets F(4,422) = .27; and perceived interpersonal assets x perceived institutional assets F(4,422) = 1.55). The three-way interacting effect was not significant (F(8,422) = 1.90).

VIII.2.4. Path analysis with loneliness as the dependent variable

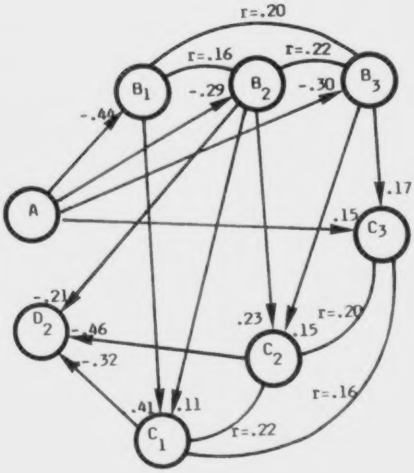
To obtain the necessary standardized regression coefficients to carry out the final step in the path analysis with loneliness as the dependent variable, a multiple regression analysis was conducted. In this analysis age-cohorts, self-reported health, primary social network, social position, perceived individual assets, perceived interpersonal assets and perceived institutional assets were used as independent variables. Loneliness, of course, was used as the dependent one. The results of the analysis are summarized in Table 30.

Table 30. Summary table of a multiple regression analysis on loneliness with age-cohorts, actual assets and perceived assets as independent variables, showing direct and indirect effects.

	Direct		
	Cum R^2	Beta	Indirect
Age-cohorts	.00	(-.03)	.27
Self-reported health	.00	(-.03)	-.25
Primary social network	.05	-.21***	-.22
Social position	.05	(-.02)	-.20
Perceived individual assets	.15	-.32***	-.10
Perceived interpersonal assets	.36	-.46***	-.07
Perceived institutional assets	.36	(.00)	-.14

*** $p < .001$, ** $p < .01$, * $p < .05$

The analysis showed that three variables contributed significantly to the variance in loneliness. Totally the dependent variables contributed to 36% of the variance in loneliness. The three significant variables directly contributed to 35%. The insignificant contribution of perceived institutional assets was not in the direction suggested by the model. Age-cohorts had no significant direct impact on loneliness. The indirect impact on loneliness was in the magnitude of .27. The indirect impacts of the three categories of actual assets were in the magnitude of about -.2. The path diagram on loneliness as the dependent variable is shown in Figure 25 with the significant beta coefficients added.



A	Age-cohorts 40-80
B_1	Self-reported health
B_2	Primary social network
B_3	Social position
C_1	Perceived individual assets
C_2	Perceived interpersonal assets
C_3	Perceived institutional assets
D_2	Loneliness

Figure 25. Path diagram with loneliness as the dependent variable.

VIII.2.5. Path analyses of loneliness for men and women

One multiple regression analysis was made for each sex on loneliness as the dependent variable with age-cohorts, self-reported health, primary social network, social position, perceived individual assets, perceived interpersonal assets and perceived institutional assets as dependent variables.

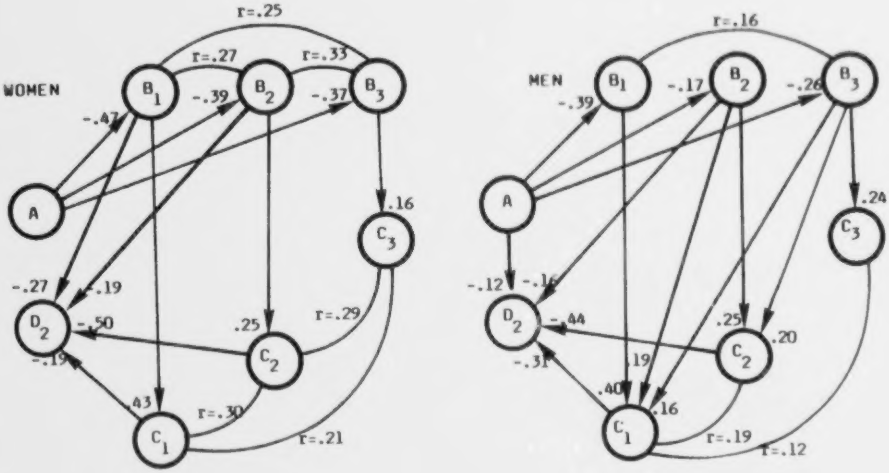
The impact of the model on loneliness for men and women is summarized in Table 31.

Table 31. Summary table for women and men of two multiple regression analyses on loneliness with age-cohorts, actual assets, and perceived assets as independent variables, showing direct and indirect effects.

	Direct				**Indirect**	
	Women		*Men*			
	Cum R^2	Beta	Cum R^2	Beta	*Women*	*Men*
Age-cohorts	.00	(.02)	.01	-.12*	.52	.11
Self-reported health	.07	-.27***	.02	(.07)	-.25	-.21
Primary social network	.11	-.19**	.04	-.16*	-.22	-.21
Social position	.12	(-.09)	.05	(.04)	-.16	-.22
Perceived individual assets	.14	-.19**	.14	-.31***	-.15	-.08
Perceived interpersonal assets	.39	-.50***	.34	-.44***	-.06	-.06
Perceived institutional assets	.39	(-.01)	.34	(.01)	-.18	-.07

*** $p < .001$, ** $p < .01$, * $p < .05$

The direct contribution of the model to the variance in loneliness showed a cumulative $R^2 = .39$ for women, that is, for women the model contributed about 39% of the variance directly. For men the non-significant impacts of self-reported health, social position and perceived institutional assets were in the wrong direction compared to the one suggested by the model. The variables in the model directly contributed to 33% of the variance in loneliness including the contribution from the age-cohorts (about 1.5%), that is, the cumulative $R^2 = .33$ for the included significant variables. For women age-cohorts had no significant direct impact on loneliness. The indirect impact was in the magnitude of .52. The indirect effects of the actual assets were in the magnitude of about -.2. For men the indirect effect of age-cohorts was in the magnitude of .11, the additive indirect impact of the actual assets was about the magnitude of -.2. The significant paths are summarized in Figure 26.


WOMEN
r=.25
r=.27
r=.33
B_1
B_2
B_3
-.47
-.39
-.37
A
.16
C_3
-.27
-.19
D_2
-.50
-.19
.25
r=.29
C_2
43
r=.30
C_1
r=.21
MEN
r=.16
B_1
B_2
B_3
-.39
-.17
-.26
A
.24
C_3
-.12
-.16
D_2
-.44
.25
.20
C_2
-.31
.19
.40
.16
C_1
r=.19
r=.12

A	Age-cohorts 40-80
B_1	Self-reported health
B_2	Primary social network
B_3	Social position
C_1	Perceived individual assets
C_2	Perceived interpersonal assets
C_3	Perceived institutional assets
D_2	Loneliness

Figure 26. Path diagrams for women and men with loneliness as the dependent variable.

VIII.3. Life satisfaction

The third dependent variable was life satisfaction. Life satisfaction in one form or another has attracted great interest in social gerontology over the past decades. Life satisfaction scales or single measurements of it are often used as cue variables to normative adaptation, which in turn is a pervading characteristic of socio-gerontological theories or models, as was discussed in earlier chapters. Here, as elsewhere, life satisfaction is treated as a dependent variable. As stated by Larson (1978):

"Poor health, low income and lack of social interaction, among other things are clearly related to lower expressed satisfaction with life, lower morale and lower contentment".

(Larson, 1978, p. 109)

With the terminology used in this study, life satisfaction is dependent on individual, interpersonal, and institutional assets as they are expressed by means of self-reported health, primary social network and social position. In this study there was an added interest directed towards the way in which these assets were perceived.

Life satisfaction was measured by a single global question: "How well do you get on with life, in broad terms?" The distribution in the sample of 40-year-olds and older is shown in Table 32.

Table 32. The distribution of life satisfaction in percent of the sample 40-year-olds and older.

	Very bad (1)	Bad (2)	Rather bad (3)	Fairly well (4)	Well (5)	Very well (6)	$\bar{x}$	S.D.	N
Life satisfaction	0	1	1	16	44	38	5.2	.8	436

Few (about 2%) chose a negative answer among the alternatives. The great majority, 82%, stated that they got on well or very well with life.

VIII.3.1. Life satisfaction in different age-cohorts

Life satisfaction showed no significant correlation with age-cohorts ($r = -.02$) or sex ($r = .04$) among those 40-year-olds and older. The distributions of life satisfaction in the different age-cohorts for the two sexes are shown in Figure 27. For men as well as women the correlation between age-cohorts and life satisfaction was insignificant; men $r = -.03$, women $r = -.01$.

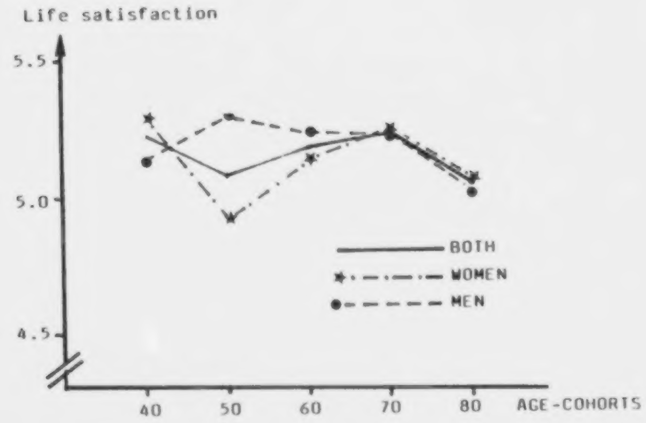


Figure 27. Mean life satisfaction in different age-cohorts of men, women and both sexes.

An analysis of variance with life satisfaction as a dependent variable and age-cohorts and sex as independent ones confirmed the insignificance of the correlations. Thus age-cohorts (F(4,435) = .79) as well as sex (F(1,435) = .55) were found to have no significant main effect on life satisfaction. The two-way interaction effect was not significant either (F(4,435) = 1.42.).

VIII.3.2. Life satisfaction and actual assets

Life satisfaction showed significant correlations with all three categories of actual assets (Table 33).

Table 33. Correlations between life satisfaction and the three categories of actual assets.

	Self-reported health	Primary social network	Social position
Life satisfaction	.26***	.22***	.10*

*** p < .001, ** p < .01, * p < .05

An analysis of variance with life satisfaction as a dependent variable and self-reported health, primary social network and social position as independent ones was carried out. This analysis showed self-reported health ($F(3,402) = 8.79$ $p < .001$) and primary social network ($F(3,402) = 7.25$ $p < .001$) to have significant main effects on life satisfaction. The main effect of social position was, however, not significant ($F(3,402) = .83$). There were no significant two-way interaction effects on life satisfaction (self-reported health x primary social network $F(9,402) = 1.02$; self-reported health x social position $F(9.402) = .78$; and primary social network x social position $F(9,402) = 1.54$). The three-way interaction effect was not significant ($F(13,402) = 1.53$).

VIII.3.3. Life satisfaction and perceived assets

Life satisfaction showed significant correlations with all three categories of perceived assets (Table 34).

Table 34. Correlations between life satisfaction and the three categories of perceived assets.

	Perceived individual assets	Perceived interpersonal assets	Perceived institutional assets
Life satisfaction	$.45^{***}$	$.37^{***}$	$.23^{***}$

*** $p < .001$, ** $p < .01$, * $p < .05$

An analysis of variance was carried out with life satisfaction as a dependent variable and perceived individual assets, perceived interpersonal assets and perceived institutional assets as the independent ones. All three categories of perceived assets had significant main effects on life satisfaction (perceived individual assets ($F(2,425) = 38.00$, $p < .001$); perceived interpersonal assets ($F(2,425) = 18.54$, $p < .001$); and perceived institutional assets ($F(2,425) = 4.46$, $p < .05$)). There were no significant two-way interaction effects (perceived individual assets x perceived interpersonal assets $F(4,425) = .72$; perceived individual assets x perceived institutional assets

F(4,425) = .98; and perceived interpersonal assets x perceived institutional assets F(4,425) = .83). The three-way interacting effect was not significant either (F(8,425) = 1.51).

VIII.3.4. Path analysis with life satisfaction as the dependent variable

A multiple regression analysis was carried out to obtain the necessary standardized regression coefficients for the final step in the path analysis on life satisfaction as the dependent variable. Independent variables were age-cohorts, self-reported health, primary social network, social position, perceived individual assets, perceived interpersonal assets and perceived institutional assets. The results of the analysis are summarized in Table 35.

Table 35. Summary table of a multiple regression analysis on life satisfaction with age-cohorts, actual assets and perceived assets as independent variables, showing direct and indirect effects.

	Direct Cum R^2	Beta	Indirect
Age-cohorts	.01	(.08)	-.26
Self-reported health	.02	.13**	.30
Primary social network	.03	.10*	.21
Social position	.03	(-.03)	.21
Perceived individual assets	.24	.45***	.08
Perceived interpersonal assets	.32	.28***	.12
Perceived institutional assets	.33	.12**	.13

*** $p < .001$, ** $p < .01$, * $p < .05$

The analysis showed that five variables significantly contributed to the variance in life satisfaction; all three categories of perceived assets and, among the actual assets, self-reported health and primary social network. Together, they contributed 32% of the variance in life satisfaction. The insignificant impact of social position was in the wrong direction compared to the one suggested by the model. Age-cohorts had an insignificant direct impact on life satisfaction. Age-cohorts had an indirect impact in the magnitude of -.26. Among the actual assets self-reported health had an indirect impact of .30, primary social network and social position both had an indirect impact of about .2. The path diagram with significant beta coefficients is shown in Figure 28.

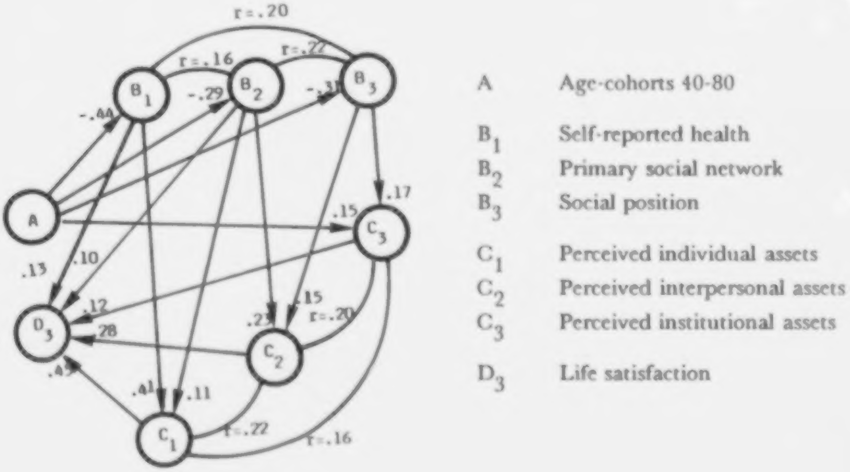

r=.20
r=.16
r=.27
B_1
B_2
B_3
-.44
-.29
-.31
A
.17
.15
C_3
.13
.10
.12
D_3
.28
.15
.23
r=.20
C_2
.45
.41
.11
C_1
r=.22
r=.16
A Age-cohorts 40-80
B_1 Self-reported health
B_2 Primary social network
B_3 Social position
C_1 Perceived individual assets
C_2 Perceived interpersonal assets
C_3 Perceived institutional assets
D_3 Life satisfaction

Figure 28. Path diagram with life satisfaction as the dependent variable.

VIII.3.5. Path analyses of life satisfaction for men and women

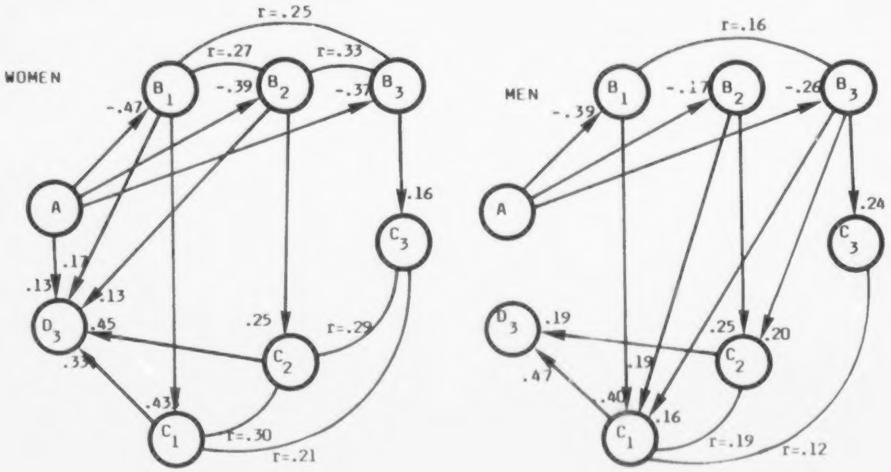
Two multiple regression analyses with life satisfaction as the dependent variable were carried out with age-cohorts, self-reported health, primary social network, social position, perceived individual assets, perceived interpersonal assets and perceived institutional assets as independent ones. One analysis was completed for each sex. The impact of the model on life satisfaction for men and women is summarized in Table 36.

Table 36. Summary table for women and men of two multiple regression analyses on life satisfaction with age-cohorts, actual assets and perceived assets as independent variables, showing direct and indirect effects

	Direct				Indirect	
	Women		*Men*			
	Cum R^2	Beta	Cum R^2	Beta	*Women*	*Men*
Age-cohorts	.02	.13*	.01	(.08)	-.40	-.15
Self-reported health	.05	.17*	.01	(.05)	.32	.32
Primary social network	.06	.13*	.01	(.05)	.26	.18
Social position	.06	(.00)	.02	(-.08)	.19	.22
Perceived individual assets	.17	.33***	.24	.47***	.15	.05
Perceived interpersonal assets	.37	.45***	.27	.19**	.13	.10
Perceived institutional assets	.38	(.09)	.28	(.10)	.20	.07

*** $p < .001$, ** $p < .01$, * $p < .05$

For women, the direct contribution from the model to the variance in life satisfaction showed a cumulative $R^2 = .38$ including the $R^2 = .02$ contribution from differences in age-cohorts. For the men, two direct influences on life satisfaction were found that together contributed to about 26% of the variance. For men the insignificant impact of social position was not in the direction suggested by the model. Age-cohorts had a significant direct impact on life satisfaction for women. The indirect impact of age-cohorts was in the magnitude of -.40 for women and for men -.15. Among the actual assets the indirect effect of self-reported health was in the magnitude of .3. The indirect impacts of the other two actual assets were about .2. The significant paths are summarized in Figure 29.


WOMEN
A
B1
B2
B3
C1
C2
C3
D3
r=.25
r=.27
r=.33
-.47
-.39
-.37
.16
.17
.13
.13
.45
.33
.25
r=.29
.43
r=.30
r=.21
MEN
r=.16
-.39
-.17
-.26
.24
.19
.25
.20
.19
.47
.40
.16
r=.19
r=.12

A	Age-cohorts 40-80	C_1	Perceived individual assets
		C_2	Perceived interpersonal assets
B_1	Self-reported health	C_3	Perceived institutional assets
B_2	Primary social network		
B_3	Social position	D_3	Life satisfaction

Figure 29. Path diagrams with life satisfaction as the dependent variable for women and men respectively .

VIII.4. The relationships between the dependent variables

The dependent variables were significantly correlated with each other, as shown in Table 37.

Table 37. Correlations between the dependent variables.

	PAL	Loneliness
Loneliness	-.28***	
Life satisfaction	.22***	-.55***

*** $p < .001$, ** $p < .01$, * $p < .05$

It is not possible to decide if a person for example feels lonely "because" he or she has low life satisfaction or if a person states low life satisfaction "because" he or she feels lonely. The correlations between the dependent variables in each age-cohort are shown in Table 38.

Table 38. Correlations between the dependent variables in each age-cohort.

	40	50	60	70	80
PAL with loneliness	-.25**	-.26**	-.30**	-.31**	-.25*
PAL with life satisfaction	.17	.15	.22**	.27**	.34**
Loneliness with life satisfaction	-.60***	-.62***	-.56***	-.57***	-.36**

*** $p < .001$, ** $p < .01$, * $p < .05$

The results show correlations between loneliness and life satisfaction in all age-cohorts suggesting more loneliness with less life satisfaction. Higher perceived activity level (PAL) consistently correlated negatively with loneliness and PAL was consistently positively correlated with life satisfaction although not always statistically significantly.

Chapter IX.

DISCUSSION

In this thesis, the main idea is that differences in access to resources are of prime importance for differences in behaviour and feelings. The presented model suggests that different categories of resources should be of simultaneous interest. The presented model also suggests that measurement of actual resources should be kept apart from measurement of the perception of the resources. The actual and perceived resources together influence behaviour and feelings. It is further suggested that, eventual differences between different age-cohorts in behaviour and feelings should be explained by differences in access to resources rather than by an age difference per se.

The dominant tradition in social gerontological theory is based on a role-theoretical approach. A few approaches based on resource theory, such as the one here presented, have been suggested. Whether the theoretical approach in social gerontology ha s been role-theoretical or resource-theoretical the conditions for normative adaptation have been emphasized. For example, the theories mentioned in chapter II could be analysed regarding different aspects of normative adaptation and what conditions should be met to bring about a positive adaptation. Very briefly, social interaction theory could be summarized as requiring sufficient and/or important significant others to build or maintain a positive self-image (Kimmel, 1974). The social breakdown syndrome (Kuypers & Bengtson, 1973) points to lack of reference groups and role loss in aging as a threat to the positive self-image much, as does social interaction theory. Activity theory briefly states (Lemon et al, 1972) that a person should be active to feel life satisfaction. Disengagement theory (Cumming & Henry, 1961) emphasizes the importance of the mutual disengagement of the aging person and his/her surroundings as crucial to life satisfaction. Exchange theory (Dowd, 1975) points to access to resources as a necessary condition for keeping up exchange relations from an independent position. In the resource theory of

Solem and Traeldal (1970), an increase in external locus of control indicates increased dependency, in turn explained by decreased access to resources.

The resources, in this thesis are, in line with Solem and Traeldal (1970), divided in three categories: individual, interpersonal and institutional resources. This trichotomization is supported by Allardt (1975) although he does not explicitly state his "Loving" and "Being" dimensions as resource categories. The suggested model distinguishes between the actual resources of an individual and the individual's perception of these resources. Actual and perceived resources, it is suggested, together give the necessary conditions for a normative adaptation. A suspected gap between the actual and perceived resources is, it is suggested, narrowed by a construct called the self-reference system. The self-reference system is based on earlier experiences of how resources should be in a certain situation, on some reference group in the surrounding environment and/or personality factors.

The examples used to reflect normative adaptation are partly inspired by Britton (1963). He discusses normative adaptation in terms of activity level, social participation and life satisfaction. Instead of social participation here loneliness is chosen and the three domains of normative adaptation are studied separately. It can be discussed whether activity level is of interest as a domain of normative adaptation. When explicitly tested as an independent variable (Lemon et al, 1972, Longino & Kart, 1982), activity level was shown to have a rather low impact on life satisfaction. In this thesis then, activity level is used as a dependent variable together with loneliness and life satisfaction. The outline of the resource model suggests that all these presented unities, that is actual resources, perceived resources, the self-reference system and the dependent variables should be related to the surrounding social and physical environment.

The theoretical model should be understood as a frame of reference, i.e. it is virtually impossible to include all aspects of the theoretical model. As an indication of the difficulties in including the universes implied in the different categories of resources, the concept of assets was used as a measurable unity. Thus, in this thesis, the concept of resource has to do with reasoning of a more theoretical kind while assets are used as an empirical concept. The advantage of the theoretical model as a frame of reference is that it provides a structure and makes explicit its empirical limitations. With a model like that outlined, a structure is formed to analyse a number of dependent variables. In specific analyses, the empirical model actually used would certainly have to be qualified. However, communication and understanding will be facilitated if it is possible to refer to some general frame of reference.

Obviously, the empirical study suggested only possibilities of testing the main feature of the theoretical model. It was not possible to direct interest to the surrounding environment and the self-reference system. In the theoretical model, the self-reference system was introduced primarily to narrow the suspected gap between the actual and perceived resources. This was thus primarily thought of as an internal mediating variable that would have a fairly low external influence on the dependent variables. Interest can be directed towards this concept later if the main feature of the model is found promising. The core concepts of the model were the actual resources and the perceived resources and their joint influence on the chosen dependent variables of perceived activity level, loneliness and life satisfaction. The relative character of the resource concept pointed out by, for example, Tornstam (1982) and Solem and Traeldal (1970) is especially obvious regarding the perceived resources. It is possible in a restricted sense to interpret environmental influence on the perceived resources. That is, it could be that perception of the resources partly reflects the actual resources in relation to environmental demands. The actual resources are perceived to be low, however high, if they are not rich enough to cope with the environment and vice versa, (they are perceived to be high, however low, if they are rich enough to cope with the environment). Only in this limited sense, was the surrounding environment included in the study.

The omnibus study primarily directed towards odontological research restricted the use of large elaborate scales and in-depth questionnaires. On the other hand, the sample made it possible to look at differences in access to assets in different age-cohorts and to test the idea that differences in age actually say little about differences in dependent variables like activity level, loneliness and life satisfaction when access to assets and the perception of the assets are accounted for.

As elaborate scales were impractical to use, another method was used. Here, a few questions thought to reflect a certain phenomenon were dichotomized and added to indices. This method was suggested by Galtung (1964). The method was regarded as fruitful as it was simple and unsophisticated and thus in harmony with the rather general questions used.

Among others, Blalock, Jr (1964) has discussed the difficulties with dichotomizations. The chosen cutting points will be crucial for the content implied in the variables. This problem is reduced when a number of dichotomous variables are added to indices according to Galtung (1964). In dichotomization, at least two principles are possible. The first is to try to find some qualitative difference and put the cutting point there. The second is to put the cutting point where it splits the sample in two parts with as closely as possible half of the sample in each part.

Both these principles were used in the study. Regarding the actual assets, primarily the first was used. Thus, actual individual assets were reflected in an index of self-reported health that was constructed from three items with the cutting points:
1) no diseases,
2) no diseases being checked for
3) no medicine intake.

These cutting points coincided with the second principle and actually divided the sample in two parts with close to half the sample in each part. The actual interpersonal assets were reflected in an index of primary social network. This was constructed from three items with the cutting points:
1) married,
2) having children
3) having daily interaction with relatives, friends and acquaintances.

The cutting point at daily interaction attempts to harmonize this item with the two others to form an index of primary social network. There was another problem with this item as it was indirect, rather a reflection of the asset than a measurement of the asset per se. It was, however, the only available item directed towards friends and acquaintances. As with the index of self-reported health, the cutting points coincided also with the second-mentioned desire to split the sample in two equal halves.

This was clearly not the case with the third category of institutional assets reflected in an index of social position. Here, the cutting points were

1) theoretical secondary school or higher,
2) employed and self-employed professionals, higher civil servants and executives
3) income SEK 150,000 or more for the married and SEK 100,000 or more for the not married.

The cutting points were put rather high with the advantage of face-validity in the index and the disadvantage of an unevenly distributed index.

There was another problem in the index of social position as the social position of the women was influenced by the social position of their husbands. This was evident in measuring income in the family where it is well-known that women have a lower salary than men. It was also evident regarding occupation, and linked with this the socioeconomic classification, where women who stated that they had been mainly housewives were classified according to their husbands' main occupation. Although these problems appear in this study, as in many others where social position is of interest, the alternatives were not regarded as better. Income and the social position that goes with it is probably best described on a family basis. The social position of housewives is not stable, but probably varies with the husbands' occupations.

The reported cross-sectional study says little about changes and nothing about aging. It is, however, reasonable to assume that self-reported health reflects a change in health status among the older age-cohorts. Most of those reporting low health were probably once healthier. It is also conceivable that some changes have taken place in the primary social network. The lower number married in the older age-cohorts was to a high extent explained by a increasing number of widows (and widowers) who had obviously once been married. The lower number of persons with at least one child in older age-cohorts was, however, most reasonably a cohort-effect. It ought not to be very usual even among 80-year-olds once to have had children and now be childless.

Among the variables that measure social position, educational level is, of course, downwards unchangeable. The lower educational level among the older age-cohorts is obviously a historical effect. The same is most probably true of occupation, and thus socioeconomic classification. The income variable is most probably mingled with effects of history and cohort. Probably most of the persons in the older age-cohorts never earned as much when they were forty as the persons do who are now in the 40-year cohort not even in relative terms. The lower income in the older age-cohorts probably also show cohort effects as the pensions are regularly lower than earlier salaries. This accounts for an element of downward change in the income variable in older age-cohorts.

Whether or not the differences found among the actual assets in relation to age-cohorts could be interpreted as changes or as a reflection of an always lower access to these assets, it was obvious that the linearity was not quite satisfactory.

Self-reported health did not show any deviance from linearity for the men from the 20-year-old cohort, nor for the women from the 30-year-old cohort. Primary social network never showed any linearity for the men and there was no deviance from linearity for the women from the 40-year-old cohort. From the 50-year-old cohort with both sexes combined, primary social network did not show any deviance from linearity. Social position did not show any deviance from linearity from the 40-year-old cohort for either men or women.

The actual assets thus peaked at different ages, which may be compared to the argument about "after-maturational time" in relation to the definition of aging suggested by Birren and Renner (1977). In view of the chosen actual assets and the statistical requirement of at least reasonable linearity the two youngest age-cohorts were excluded from the subsequent analyses. As a result then the sample was reduced to 40-, 50-, 60-, 70- and 80-year old cohorts.

The chosen structure with three categories of actual assets each reflected by three items was supported by a factor analysis. The number of chosen assets is perhaps a bit arbitrary but there is support in the literature for a trichotomization (Solem & Traeldal, 1970, Allardt, 1975). What was supported in the factor analysis was not that there should be a trichotomization per se, but rather that the suggested trichotomeous structure was reflected by the chosen items.

Thus, in the light of these conditions, and in the terminology of Birren and Renner, aging begins at 40. Or, more seriously, access to assets is lower in older age-cohorts from the 40-year-old age-cohort and upwards. With the chosen indices this is true for self-reported health ($r = -.44$), primary social network ($r = -.29$) and social position ($r = -.30$). This may reflect some hard facts concerning differences in different age-cohorts in our society. On the other hand, it is possible to find assets that peak at higher ages, but, when added to indices of common sense content, they should be fairly rare. I am here discussing group values and cohort differences; it will, of course, always be possible to find individual exceptions.

In this thesis, a fairly large number of correlations were shown. The risk of redundancy error in a large number of correlations pointed out by e.g. Werdelin (1982) was considered to be reduced as almost all reported correlations, although not always statistically significant, point in the direction suggested by the model. Further, the correlations were primarily used as descriptive statistics. All correlations were tested for statistical significance with other methods, primarily analysis of variance.

There was a difference in the size of the correlations between age-cohorts and primary social network for women as compared to men. The age-cohorts correlated ($r = -.17$) with primary social network for men and ($r = -.39$) for women. This difference probably reflects a factual difference in the strength of the primary social network for men and women. The fact that women live longer than men automatically has an impact on the strength of the primary social network in older age-cohorts.

The perceived assets were trichotomized as perceived individual assets, perceived interpersonal assets and perceived institutional assets to match the trichotomization of the actual assets. It was obvious that the perceived assets did not reflect actual assets exactly. In this case this was probably much a matter of measurement. It must be possible to construct an index of perceived assets that more clearly reflects the actual assets. The perceived ego-strength together with the perceived health was dichotomized and added to an index of perceived individual assets. The dichotomization was done according to the earlier mentioned second principle, that is, to try to divide the item in two halves of equal size. The same principle was used for the construction of perceived interpersonal assets and perceived institutional assets. Perceived interpersonal assets were constructed from items about perceived quality and perceived power in social network. Perceived institutional assets were constructed from items about perceived economy and perceived social power.

Although unsatisfactorily measured and narrowly constructed, all three categories of perceived assets were related primarily to the actual assets suggested by the model. This was true for both sexes together as well as for each sex separately.

In the total sample, actual assets contributed to about 19% of the variation in perceived individual assets. Self-reported health contributed to about 18% and primary social network to 1% of the variation. Primary social network contributed to 5% of the variation in perceived interpersonal assets and social position to about 2%. Social position contributed to about 3% of the variance in perceived institutional assets.

The dependent variables were perceived activity level, loneliness and life satisfaction. These dependent variables were seen as important domains of normative adaptation. They were, however, used separately as a test of the flexibility of the model. Perceived activity level (PAL) was constructed from three items concerning solitary activities, activities in the close network and participation in formally organized activities. These three items thus formed a measurement of perceived activity level. Loneliness was measured by a five-item scale, concerning being bothered with feelings of loneliness, feeling as a part of a group of friends, knowing people to talk to, lacking companionship and feeling left out. Life satisfaction was measured by a global question about how well the participant got on with life in broad terms.

There was an inconsistency in PAL, the index constructed to measure perceived activity level. One of the included items constituting PAL (i.e. activities you do on your own) did not correlate with the other two (activities with relatives and friends, respectively participation in formally organized activities). This suggested that some people consider themselves to be active in all three measured areas of activity to about the same extent, while others compensate low activity with other people with more activity of their own or perhaps the other way round. Others engage in activities with others so much that they do not have time or do not feel like engaging in solitary activities or the other way round.

There was however another obvious problem with the used index of PAL. The items to measure activity level all implied leisure activity. If working activity had been included, the difference between the two oldest age-cohorts and the others would probably have increased as loss in working activity is not apt to be fully compensated by an increase in leisure activity. It could be that persons in working age felt that they did not have sufficient time for leisure activities and thus scored lower on PAL.

If on the other hand, working activities had been used, the introduced correlations would have been rather trivial. The thought was that with the items used it was left open to everyone to relate the activity level to the possibilities at hand and thus PAL should reflect activity level (outside work) rather well.

There seemed to be less of a problem with the measurement of loneliness used and even with the single item of life satisfaction. The problem with measurement equivalence could, however, be expected to increase in a single item measurement. It could be that life satisfaction does not denote the same content in different age-cohorts. The possibility of verifying whether this could be the case was limited in this study. The low correlation between age-cohort and life satisfaction could not be interpreted in these terms.

It was suggested that three categories of actual assets (self-reported health, primary social network and social position) and the perception of these assets combined should have an impact on perceived activity level, loneliness and life satisfaction. Simply stated the more access to actual assets and the higher the assets were perceived, the higher the perceived activity level, the lower the loneliness and the better the life satisfaction. In this study, it was possible also to test the idea that the access to actual assets was lower in older age-cohorts. This lower access to actual assets should "explain" the expected lower activity level, the anticipated more often expressed feelings of loneliness and any lower life satisfaction among persons in the older age-cohorts.

For persons in the 40-year-old and older age-cohorts, there were some significant contribution from the model to the variance in the dependent variables. The contribution from the model to the variance in perceived activity level was, to say the least, not very impressive. The cumulative $R^2 = .13$ meant that the model directly contributed to about 13% of the variance in perceived activity level. The "strongest" direct contributor was perceived interpersonal assets, contributing about 8% of the variance in perceived activity level. Of the actual assets social position directly contributed about 4% of the variation and primary social network contributed directly about 1% of the variation in perceived activity level. The additive indirect contribution from social position and primary social network was very low, together about 2%.

When the sample of 40-year-olds and older was analysed separately for both sexes, it was shown that the model directly contributed 19% of the variance in PAL for men and 10% for women. For men as well as for women, perceived interpersonal assets contributed strongest to the variance in PAL, almost 10% for the men and about 7% for the women. Social position contributed almost 5% to the variance in PAL for the men. Primary social network contributed about 2% of the variance in PAL for the women and almost 3% for the men. The indirect contribution of the actual assets was low for both men and women.

The sample permitted the additive testing of the impact of differences in age-cohorts on the dependent variables. Age-cohorts did not contribute directly to the variance in perceived activity level in the total sample.

The same holds true when both sexes were analysed separately. Neither among men nor among women were age-cohorts found to have a direct influence on perceived activity level. The low contribution from the model to the variance in PAL is perhaps not that surprising as PAL firstly implied leisure activity only and secondly was a perceptional measurement of this implied leisure activity. It might be rewarding in future research to study the impact of the model on activity level more conventionally measured.

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The direct contribution from the model to the variance in loneliness was more satisfactory. The cumulative $R^2 = .36$ meant that the model directly contributed about 36% of the variance in loneliness. The variables found to contribute significantly to the variance in loneliness were perceived interpersonal assets (21%) perceived individual assets (10%) and primary social network (4%).

When the sample of 40-year-old and older cohorts was divided on the basis of sex some interesting similarities and differences appeared. For both men and women the strongest direct contributor to the variance in loneliness was perceived interpersonal assets. That contributed 25% of the variance for women and 19% of the variance in loneliness among men. Among women, the second strongest direct contributor was self-reported health which contributed about 7% of the variance in loneliness. For women, perceived individual assets and primary social network contributed about 3.5% each of the variance in loneliness. Together about 38% of the variance in loneliness among the women was "explained" as a direct contribution from the model.

Among men, self-reported health was not found to contribute significantly to the variance in loneliness. As with women, perceived individual assets (10%) and primary social network (2.5%) directly contributed to the variance in loneliness. Unlike women, however, age-cohorts had a direct influence on loneliness among men. The beta coefficient beta = -.12, indicating that men feel less lonely in older age-cohorts, contributed directly about 1.5% of the variance in loneliness among the men. The indirect effect of age-cohorts was in the magnitude of .11. This suggested more feelings of loneliness in older age-cohorts as an effect of less access to actual assets. The insignificant Pearson correlation $r = -.02$ between age-cohorts and loneliness in men was thus to some extent qualified in the path analysis. When the lower access to assets is controlled for, there seems to be a tendency for the men to feel less lonely in older age-cohorts.

Among women, the Pearson correlation $r = .23$ between age-cohorts and loneliness was found significant and suggested more loneliness in older age-cohorts. An analysis of variance showed age-cohorts to be a main effect on loneliness among women. The path analysis did not show age-cohorts to have any direct significant impact on loneliness among women.

The indirect impact in the model was in the magnitude of .52, indicating that the increased loneliness in older age-cohorts among women could primarily be "explained" by lower access to actual assets.

Probably the findings regarding the differences between the sexes are somewhat inconsistent. However, it is possible to speculate about some of them. It was shown that there was a difference between the sexes in access to the primary social network across the age-cohorts. The primary social network was lower in older age-cohorts among the women. This is, the primary social network lasts longer for the men. There is nothing new in this, but perhaps it can shed some light on the difference in the importance of self-reported health to loneliness between the sexes. As the primary social network was weaker in older age-cohorts for women, the access to assets in terms of self-reported health become more important in order to keep in touch with persons outside the primary social network. In other words in order to keep loneliness low in older age-cohorts women need to have better health as the primary social network becomes smaller. Still for men, as well as for women, the perceived interpersonal assets are of prime importance for the feelings of loneliness.

The model directly contributed to 33% of the variance in life satisfaction. Most important here was the contribution of perceived individual assets (20% of the variance in life satisfaction). Perceived interpersonal assets contributed 8% of the variance and perceived institutional assets and primary social network about 1% each of the variance in life satisfaction.

When the sample from the 40-year-old and older cohorts was divided on the basis of sex there was a difference in the pattern of paths. For the men only perceived individual assets and perceived interpersonal assets were shown to contribute directly to the variance in life satisfaction with 22% and 4% respectively.

Among women the variables in the model directly contributed about 35% of the variance in life satisfaction. This included a contribution of about 2% from the age-cohorts. Perceived interpersonal assets was the strongest contributor from the model, contributing about 20% of the variance in life satisfaction for the women. The second strongest was perceived individual assets which contributed about 11% of the variance. Self-reported health contributed about 3% of the variance and primary social network contributed about 2% of the variance in life satisfaction for women.

Among women age-cohort was shown to have a positive direct impact indicating more life satisfaction in older age-cohorts and a negative indirect impact indicating less life satisfaction in older age-cohorts. This result was interpreted to mean that when the negative impact of lower access to actual assets was compensated for, there was a tendency among the women to feel more life satisfaction in older age-cohorts.

It was suggested that all actual and all perceived assets should be significant contributors to the variance in all dependent variables. This was clearly not the case. This can be interpreted as a weakness in the model, a weakness in the measurements used or as a possibility of specifying influences on the dependent variables through the model. In the reported path analyses all variables suggested by the model were found to contribute directly to the variance in the dependent variables at least once.

Self-reported health contributed directly to the variance in loneliness and life satisfaction for women. Primary social network contributed directly to the variance in all presented path analyses except for the variance in life satisfaction among men. Social position contributed to the variance in perceived activity level for the men and for both sexes and to the variance in loneliness among the women. Perceived individual assets contributed to the variance in loneliness and life satisfaction for men, women and both sexes. Perceived interpersonal assets contributed to the variance in all path analyses. Perceived institutional assets contributed to life satisfaction in the total sample of the 40-year-old and older cohorts. This indicates that the model cannot easily be further reduced.

Further, the sample gave the additional possibility of testing the idea that when lower access to actual assets and the perception of them are controlled for, there should be no tendency to report lesser perceived activity level, more loneliness or less life satisfaction in older age-cohorts. In the study, the results showed that only concerning loneliness was there a tendency towards the expected pattern. Loneliness was more often reported in older age-cohorts but when both sexes were analysed separately this was shown to be true only for women. When the impact of the model was introduced, there was no direct impact from age-cohorts on loneliness for both sexes together or for women. Among the men, there was a tendency to report lower loneliness in older age-cohorts when the impact of the model was introduced.

When the impact of the model was introduced, there was a tendency among the women to report more life satisfaction in older age-cohorts. In this case the model qualified an original non-correlation between age-cohorts and life satisfaction among the women.

In this study, many aspects of the theoretical model were not considered; for example, the influence of earlier experiences, the influence of the surrounding environment and the influence of the self-reference system. It could be speculated that some measurement of these entities might "explain" the tendency to report less loneliness in older age-cohorts and the tendency to report more life satisfaction among the women in older age-cohorts. The self-reference system is thought to work as a form of adaptation and perhaps this does have some impact. It is also probable that the surrounding environment has some impact. It is possible that environments that require less actual assets increase life satisfaction and reduce feelings of loneliness. It is not age per se that has an impact on variables like loneliness and life satisfaction but rather differences in access to assets and the perceived situation that often vary with age.

It was shown that the access to actual assets was lower in older age-cohorts. In the path analyses, the contribution from the perceived assets to the variance in the dependent variables was often stronger than the contribution from the actual assets. The perceived assets were not lower in older age-cohorts. The contribution from the model to the variance in perceived activity level was low. The model contributed more to the variance in loneliness and life satisfaction.

Although the perceived assets were the dominant contributor to the variance in the dependent variables, it would be unwise to neglect the impact of the actual assets. The actual assets contribute directly to the variance in the dependent variables even if only sporadically. There was also often an indirect impact of the actual assets. The actual assets had a significant impact on the perceived assets. If the actual assets are neglected in favour of a one-sided concentration on the perceivedasse ts, one will soon be lost wondering what kind of reality the perceived assets represent. The actual assets are necessary as a drift-anchor to outer reality.

It was thus possible to study the core concepts of the model, although the sparsity of measurement left some question-marks. Assets have to be understood as representations or examples of the universes implied in the categories of individual, interpersonal and institutional resources. Only very small parts of the universes are covered. It is interesting to note that even with the easily gathered data that were used, the model has some impact on the dependent variables. This impact is much in line with the one suggested. In view of the measurements used, there is a surprising face validity in the pattern of the path analyses.

The outlined model is, of course, still just an outline. It is obvious that many problems are left unsolved. The thesis has pointed out an alternate way of understanding perceived activity level, loneliness and life satisfaction as a reflection of access to actual assets and how these assets are perceived. The differences in access to actual assets in different age-cohorts are not only a matter of construction of the actual assets but a reflection of some facts in society. The actual assets have some influence on the perceived assets. Perceived as well as actual assets have an impact on the dependent variables. When actual and perceived assets influence the dependent variables, the impact of belonging to different age-cohorts is in some cases qualified. The model then can be used as a tool to study differences in different dependent variables that are obscured by the differences in access to actual assets in different age-cohorts.

In the future it will be of interest to study the features of the theoretical model, that were not touched upon in the empirical study reported here. It will be of interest to study if a self-reference system based on earlier experiences, reference-groups and/or personality can be constructed as a mediating variable between the actual and perceived assets. The impact of different environments and environmental demands on the different aspects of the model have to be elucidated. With a longitudinal design it will be possible to study to what extent changing actual assets are reflected in the perceived assets as well as in the dependent variables. This will demand better measurements of the actual assets and certainly of the perceived assets compared to the ones used in this study. Of particular interest will be the study of the relationship of actual and perceived assets. In the thesis presented here a linear relation is implied. This is probably an over simplification. With a longitudinal design, one can see if a drop in actual assets below some critical point will be reflected in a corresponding drop in perceived assets. At group level, it will perhaps even be possible to discuss where this critical point lies. The model also can be used as a tool in social policy. Possible approaches to increasing access to actual resources, decreasing environmental demands or influencing the perception of resources are covered by the model. Individual resources could be increased through health checks, health information, nutrition information, learning of alternate procedures to handle different problems, etc. Interpersonal resources could be increased through supporting relatives and facilitating opportunities for the elderly to meet and make friends in activity centres of various kinds. Institutional resources could be increased through economic transfers and changes of attitudes concerning the status of old age. Probably these attitudes would change automatically if other resources were sufficiently increased.

It would be possible to influence the perceptions of resources through a therapeutic approach, but extensive efforts in this area would probably be difficult. It would also be unethical if there were not a clear gap between actual and perceived resources.

Care of the elderly today primarily works through decreasing the demands from surrounding environment. Traditionally, the care is directed towards reducing the demands of the environment by taking care of things the elderly have problems doing, irrespective of why these problems exist. It is often necessary to lower environmental demands but is is obvious that future care of the aged will gain substantively in quality when efforts are primarily concentrated on increasing access to actual resources, as resources can be used by the individual according to his or her own choice.

Chapter X.

REFERENCES

Achenbaum, W.A. Societal perceptions of aging and the aged. In R.H. Binstock and E. Shanas (Eds.). *Handbook of aging and the social sciences*. New York: Van Nostrand Reinhold Co, 1985.

Adam, J. Sequential strategies and the separation of age, cohort and time-of-measurement contribution to developmental data. *Psychological Bulletin, vol. 85*, 1978, pp. 1309-1316.

Ahammer, I.M. Social-learning theory as a framework for the study of adult personality development. In P.B. Baltes and K.W. Schaie (Eds.). *Life-span developmental psychology. Personality and socialization*. New York: Academic Press, 1973.

Ahammer, I.M. and Baltes, P.B. Objective vs percieved age differences in personallity: How do adolescents, adults and older people view themselves and each other? *Journal of gerontology, vol. 27*, 1972, pp. 46-51.

Allardt, E. *Att ha Att älska Att vara. Om välfärd i norden*. Lund: Argos förlag AB, 1975.

Arvidsson, H. *Äldres fritid*. Jönköping: Rapport nr 37 från Institutet för gerontologi i Jönköping, 1980.

Asher, H.B. *Causal modeling*. Beverly Hills: Sage publications 2nd ed., 1984.

Baltes, P.B. Longitudinal and cross-sectional sequences in the study of age and generation effects. *Human Development, vol. 11*, 1968, pp. 145-171.

Baltes, P.B. Life-span developmental psychology: some converging observations on history and theory. In P.B. Baltes and O.G. Brim, Jr (Eds.). *Life-span development and behaviour*. New York: Academic Press, 1979.

Baltes, P.B. and Nesselroade, J.R. Mulitvariate longitudinal and cross-sectional sequences for analysing ontogenetical and generational change: A methodological note. *Developmental Psychology, vol 2*, 1970, pp. 163-168.

Beckman, L.J. and Houser, B.B. The consequences of childlessness on the social psychological well-being of older women. *Journal of gerontology, vol. 37*, 1982, pp. 243-250.

Bengtson, V.L. and Kuypers, J.A. Generational difference and the developmental stake. *Aging and Human Development, vol. 2*, 1971, pp. 249-260.

Bengtson, V.L., Dowd, J.J., Smith, D.H. and Inkeles, A. Modernization, modernity and perceptions of aging: A cross-cultural study. *Journal of Gerontology, vol. 30*, 1975, pp.688-695.

Bengtson, V.L., Cutler, N.E., Mangen, D.J. and Marshall, V.W. Generations, cohorts and relations between age-groups. In R.H. Binstock and E. Shanas (Eds.). *Handbook of aging and the social sciences*. New York: Van Nostrand Reinhold Co, 1985.

Berg, S. and Johansson, B.E.A. Det sociala nätverket, en viktig faktor för äldreomsorgen. *Socialmedicinsk Tidskrift, vol. 55*, 1978, pp. 579-583.

Berg, S., Mellström, D., Persson, G. and Svanborg, A. Loneliness in the Swedish aged. *Journal of Gerontology, vol. 36*, 1981, pp. 342-349.

Berg, S., Johansson, B.E.A. and Malmberg, B. Ensamhet. *Nordisk Psykologi, vol. 34*, 1982, pp. 303-311.

Bild, B.R. and Havighurst, R.J. Life satisfaction. *Gerontologist, vol. 16*, 1976, pp. 70-75.

Birren, J.E. Principles of research on aging. In J.E. Birren (Ed.). *Handbook of the aging and the individual*. Chicago: The university of Chicago press, 1959.

Birren, J.E. *The psychology of aging*. Englewood Cliffs, N.J.: Prentice Hall, Inc., 1964.

Birren, J.E. and Renner, V.J. Research on the psychology of aging. In J.E. Birren and K.W. Schaie (Eds.). *Handbook of the psychology of aging*. New York: Van Nostrand Reinhold Co, 1977.

Birren, J.E. and Schroots, J.J.F. *Aging from cell to society: A search for new metaphors*. Mexico City: WHO meeting, Agenda item 6, 1980.

Blau, P.M. *Exchange and power in social life*. New York: John Wiley & Sons, Inc., 1964.

Blalock, Jr., H.M. *Causal inferences in non experimental research*. Chapel Hill, N.C.: The University of North Carolina press, 1964.

Blalock, Jr., H.M. Theory building and causal inferences.In H.M. Blalock, Jr. and A.B. Blalock (Eds.). i *Methodology in social research*. New York: McGraw-Hill book company, 1968.

Britton, J.H. Dimensions of adjustment of older adults. *Journal of Gerontology, vol. 18*, 1963, pp. 60-65.

Bunte, R. and Jörberg, L. *Historia i siffror*. Stockholm: Liber AB, 1986.

Burrus-Bammel, L.L. and Bammel, G. Leisure and recreation. In J.E. Birren and K.W. Schaie (Eds.). *Handbook of the psychology of aging*. New York: Van Nostrand Reinhold Co, 1985.

Bühler, C. Genetic aspects of the self. *Annuals of the New York Academy of Science, vol. 96*, 1962, pp. 730-764.

Carlsson, G., Arvidsson, O., Bygren, L-O. and Werkö, L. *Liv och hälsa. En kartläggning av hälsoutvecklingen i Sverige*. Stockholm: Liber förlag, 1979.

Carlsson, G. and Karlsson, K. Age cohorts and the generations of generations. *American Sociological Review, vol. 35*, 1970, pp. 710-713.

Carp, F.M. Impact of improved living environment on health and life expectancy. *Gerontologist, vol. 17*, 1977, pp. 242-249.

Caspi, A. and Edler, Jr., G.H. Life satisfaction in old age: Linking social psychology and history. *Journal of Psychology and Aging, vol. 1*, 1986, pp. 18-26.

Chatfield, W.F. Economic and socialogical factors influencing life satisfaction of the aged. *Journal of Gerontology, vol. 32*, 1977, pp. 593-599.

Cooley, C.H. *Human nature and the social order*. New York: Charles Schribner's Sons, 1902.

Cumming, E. Further thoughts on the theory of disengagement. *International Social Science Journal, vol. 15*, 1963, pp. 377-393.

Cumming, E. and Henry, W.E. *Growing old*. New York: (Reprint ed.: New York: Arno Press Inc., 1979) Basic Books Publishing Co, 1961.

DeCarlo, T.J. Recreation participation patterns and succesful aging. *Journal of Gerontology, vol. 29*, 1974, pp. 416-422.

Dowd, J.J. Aging as exchange: A preface to theory. *Journal of Gerontology, vol. 30*, 1975, pp. 584-594.

Elinson, J. and Trussel, R.E. Some factors relating to degree of correspondence for diagnostic information as obtained by household interviews and clinical examinations. *American Journal of Clinic Health, vol. 47*, 1957, pp. 311-321.

Elwell, F. and Maltbie-Crannell, A.D. The impact of role loss upon coping resources and life satisfaction of the elderly. *Journal of Gerontology, vol. 36*, 1981, pp. 223-232.

Emerson, R.M. *Position and power in exchange networks*. Seattle: Institute of sociological research, University of Washington, 1972.

Emerson, R.M. Social exchange theory. *Annual Review of Sociology*, 1976, pp. 335-362.

Eriksson, E.H. *Childhood and society*. New York: Norton, 1950.

Eriksson, R. *Having. Loving. Being*. Stockholm: Reprint Series No 29 from Swedish institute for social research, 1977.

FASS 1983. *Farmaceutiska specialiteter i Sverige*. Stockholm: Linfo, Läkemedelsinformation AB, 1983.

Ferguson, G.A. *Statistical analysis in psychology and education*. London: McGraw-Hill 2nd ed., 1966.

Galtung, J. Foreign policy opinion as a function of social position. *Journal of Peace Research, vol. 3/4*, 1964, pp. 206-231.

Gergen, K.J. Social psychology as history. *Journal of Personality and Social Psychology, vol. 26*, 1973, pp. 309-320.

Glenn, N.D. Cohort analyst's futile quest: Statistical attemts to separate age, period and cohort effects. *American Sociological Review, vol. 41*, 1976, pp. 900-904.

Hagberg, B. *A conceptional model of coping*. Lund: Unpublished paper I: 8, Gerontological Center, 1987.

Henry, W.E. The theory of intrinsic disengagement. In P.F. Hansen (Ed.). *Age with a future*. Philadelphia: Davis,1964.

Hochchild, A. Disengagement theory: A critique and a proposal. *American Sociological Review, vol. 40*, 1975, pp. 553-569.

Holahan, C.K. Lifetime achivement patterns, retirement and life satisfaction of gifted aged women. *Journal of Gerontology, vol. 36*, 1981, pp. 741-749.

Homans, G.C. Social behaviour as exchange. *American Journal of Sociology, vol. 63*, 1958, pp. 597-606.

Hoyt, D.R., Kaiser, M.A., Peters, G.R. and Babchuk, N. Life satisfaction and activity: A multidimentional approach. *Journal of Gerontology, vol. 35*, 1980, pp. 935-941.

Hugosson, A., Koch, G., Bergendal, T., Hallonsten, A-L., Laurell, L., Lundgren, D. and Nyman, J-E. Oral health of individuals aged 3 - 80 years in Jönköping, Sweden, in 1973 and 1983. *Swedish Dental Journal, vol. 10*, 1986, pp. 103-117

I.C.D. *International Classification of Diseases*. Geneva: WHO, 1977.

Johansson, B.E.A. *Declining resources in old age: Theoretical and practical aspects*. Jönköping: Unpublished paper, Institute of gerontology, 1976.

Johansson, B.E.A., Andersson, G. and Sol, D-E. *Ålderdomshem eller servicehus. En jämförelse mellan personer som bor på ålderdomshem och servicehus*. Jönköping: Rapport nr 36 från Institutet för gerontologi, 1979.

Johansson, S. *Om levnadsnivåundersökningen*. Stockholm: Allmänna förlaget, 1970.

Johansson, S. *Om "att ha, att älska, att vara". En kritisk granskning av en jämförande undersökning av välfärd i Norden*. Stockholm: Särtrycksserie nr 28 från Institutet för social forskning, 1977.

Jönköpings kommun. *Statistisk årsbok*. Jönköping: Jönköpings kommuns ekonomikontor, 1983.

Kausler, D.H. *Experimental psychology and human aging*. New York: John Wiley & Sons, Inc., 1982.

Kim, J-O. and Kohout, F.J.: Special topics in general linear models. In N.H. Nie, C.H. Hull, J.G. Jenkins, K.Steinbrenner and D.H. Bent (Eds.). *Statistical package for the social sciences*. New York: McGraw-Hill, 2nd ed., 1975.

Kimmel, D.C. *Adulthood and aging*. New York: John Wiley & Sons, Inc., 1974.

Krauss, I.K. Between - and within - group comparisons in aging research. In L.W. Poon (Ed.). *Aging in the 1980's*. Washington D.C.: American Psychological Association, Inc., 1980.

Kuypers, J.A. and Bengtson, V.L. Social breakdown and competence. *Human Development, vol. 16*, 1973, pp. 181- 201.

Labouvie, E.W. Identity versus equivalence of psychological measures and constructs. In L.W. Poon (Ed.). *Aging in the 1980's*. Washington D.C.: American Psychological Association, Inc., 1980.

Lachman, M.E. Locus of control in aging research. *Journal of Psychology and Aging, vol. 1*, 1986, pp. 34-40.

Larson, R. Thirty years of research on the subjective well-being of older Americans. *Journal of Gerontology, vol. 33*, 1978, pp. 109-125.

LaRue, A., Bank, L., Jarvik, L. and Hetland, M. Health in old age: How do physicians' ratings and self-ratings compare? *Journal of Gerontology, vol. 34*, 1979, pp. 687-691.

Lawton, M.P. Activities and leisure. In C. Eisdorfer (Ed.). *Annual Review of Gerontology and Geriatrics, vol. 5*. New York: Springer Publishing Co, 1985.

Lemon, B.W., Bengtson, V.L. and Peterson, J.A. An exploration of the activity theory of aging: Activity types and life satisfaction among in-movers to a retirement community. *Journal of Gerontology, vol. 27*, 1972, pp. 511-523.

Liang, J. Self-reported physical health among aged adults. *Journal of Gerontology, vol. 41*, 1986, pp. 248-260.

Lohmann, M. Correlations of life satisfaction, morale and adjustment measures. *Journal of Gerontology, vol. 32*, 1977, pp. 73-75.

Longino, C.F. and Kart, C.S. Explicating activity theory. A formal replication. *Journal of Gerontology, vol. 37*, 1982, pp. 713-722.

Lopata, H.Z. *Women as widows. Support systems*. New York: Elsevier, 1979.

Maddox, G.L. Some correlates of difference in self-assessment of health status among the elderly. *Journal of Gerontology, vol. 17*, 1962, pp. 180-185.

Maddox, G.L. *Themes and issues in sociological theories of human aging*. Washington D.C.: Proceedings Vol. 1, 8th International Congress of Gerontology, 1969.

Maddox, G.L. and Campbell, R.T. Scope, concepts and methods in the study of aging. In R.H. Binstock and E. Shanas (Eds.). *Handbook of aging and the social sciences*. New York: Van Nostrand Reinhold Co, 1985.

Malmberg, B. *Från tjänsteman till pensionär - en undersökning före och efter pensioneringen*. Jönköping: Rapport nr 58 från Institutet för gerontologi, 1984.

Malmberg, B. *Dimentions of loneliness in different age-groups*. Tampere: Congress proceedings, 8th Scandinavian congress of gerontology, 1986.

Malmberg, B. and Berg, S. *Äldres flyttningar till service och vård*. Vetlanda, 1981. Stockholm: SPRI rapport nr 135, Appendix, 1983.

Malmberg, B. and Berg, S. Varför flyttar äldre till institution? I O. Dehlin & B. Steen. *Sjunde nordiska kongressen i gerontologi*. Malmö, 1984.

Markides, K.S. and Martin, H.W. A causal model of life satisfaction among the elderly. *Journal of Gerontology, vol. 34*, 1979, pp. 86-93.

Mason, W.M., Mason, K.O. and Winsborough, H.H. Reply to Glenn. *American Sociological Review, vol. 41*, 1976, pp. 904-905.

Mead, G.H. *The social psychology of George Herbert Mead*. Strauss (Ed.). Chicago: University of Chicago Press, 1956.

Medley, M.L. Satisfaction with life among persons sixtyfive years of age and older. *Journal of Gerontology, vol. 31*, 1976, pp. 448-455.

Mills, J. *Experimental social psychology*. New York: Macmillan, 1969.

Nardi, A.H. Person-perception research and the perception of life-span development. In P.B. Baltes and K.W. Schaie (Eds.). *Life-span development. Personality and socialization*. New York: Academic Press, 1973.

Norusis, M.J. *SPSS/PC + for the IBM PC/XT/AT*. Chicago: SPSS Inc., 1986.

Palmore, E.B. When can age, period and cohort be separated? *Social Forces, vol. 57*, 1978, pp. 282-295.

Palmore, E.B. and Manton, K. Modernization and status of the aged: International correlations. *Journal of Gerontology, vol. 29*, 1974. pp. 205-210.

Palmore, E.B., Cleveland, W.P., Nowlin, J.B., Ramm, D. and Siegler, I.C. Stress and adaptation in later life. *Journal of Gerontology, vol. 34*, 1979, pp. 841-851.

Peppers, L.G. Patterns of leisure and adjustment to retirement. *Gerontologist, vol. 16*, 1976, pp. 441-446.

Perlman, D. and Peplau, L.A. Theoretical approaches to loneliness. In L.A. Peplau and D. Perlman (Eds.). *Loneliness. A sourcebook of current theory research and therapy*. New York: John Wiley & Sons, Inc., 1982.

Pfeiffer, E. and Davis, G.C. The use of leisure time in middle life. *Gerontologist, vol. 11*. 1971, pp. 187-195.

Quetelet, A. *A treatise on man and the development of his faculties*. Edingburgh: William and Robert Chambers, 1842.

Rehn, T. *Tjänstemäns pensionering. En longitudinell studie om hälsa, livstillfredsställelse och inställning till pensioneringen*. Uppsala: Projekt Äldre i samhället: förr, nu och i framtiden, Arbetsrapport nr 15, Uppsala universitet, 1984

Riegel, K.F. Adult life crises: A dialectic interpretation of development. In N. Datan and L.H. Ginsburg (Eds.). *Life-span developmental psychology. Normative life crises*. New York: Academic Press, Inc., 1975.

Riley, M.W. Age strata in social systems. In R.H. Binstock and E. Shanas (Eds.). *Handbook of aging and the social sciences*. New York: Van Nostrand Reinhold Co, 1976.

Rodgers, W.L. Estimable functions of age, period and cohort effects. *American Sociological Review, vol. 47*, 1982, pp. 774-787.

Rosow, I. What is a cohort and why? *Human Development, vol. 21*, 1978, pp. 65-75.

Rotter, J.B. *Social learning and clinical psychology*. Englewood Cliffs, N.J.: Prentice Hall, 1954.

Russel, D. The measurement of loneliness. In L.A. Peplau and D. Perlman (Eds.). *Loneliness. A sourcebook of current theory, research and therapy*. New York: John Wiley & Sons, Inc., 1982.

Ryder, N.B. The cohort as a concept in the study of social change. *American Sociological Review, vol. 30*, 1965, pp. 843-861.

SCB. *Levnadsförhållanden. Hälsa och sjukvårdskonsumtion 1975*. Stockholm: Rapport nr 11, Statistiska centralbyrån, 1979.

SCB. *Socioekonomisk indelning (SEI)*. Stockholm: Meddelanden i samordningsfrågor 1982:4, Statistiska centralbyrån, 1982.

SCB. *Pensionärer*. Stockholm: Levnadsförhållanden, rapport nr 43, Statistiska centralbyrån, 1985.

SCB (Vogel, J.). *Det svenska klassamhället: Klasstrukturer, social rörlighet och ojämlikhet*. Stockholm: Levnadsförhållanden, rapport nr 50, Statistiska centralbyrån, 1987.

Schaie, K.W. A general model for the study of developmental problems. *Psychological Bulletin, vol. 64*, 1965, pp. 92-107.

Schaie, K.W and Baltes, P.B. On sequential strategies in developmental research. Description or explaination. *Human Development, vol. 18*, 1975, pp. 384-390.

Shanas, E. The family as a social support system in old age. *Gerontologist, vol. 19*, 1979, pp. 169-174.

Smith, H.L., Mason, W.M. and Feinberg, S.E. More chimeras of the age-period-cohort accounting framework: Comment on Rodgers. *American Sociological Review, vol. 47*, 1982, pp. 787-793.

Solem, P.E. *Individ, miljø og aldring*. Jönköping: Rapport nr 7 från Institutet för gerontologi, 1972.

Solem, P.E. Tilgang till ressurser og sosial deltakelse blant eldre. *Nordisk Psykologi, vol. 26*, 1974, pp. 137-144.

Solem, P-E. Dependency-due to lack of individual or environmental resources? In J.M.A. Munnichs and W.J.A, van den Heuvel (Eds.). *Dependency or interdependency in old age*. The Hague: Martinus Nijhoff, 1976.

Solem, P.E. and Traeldal, A. *Om internalitet/externalitet*. Oslo: Hovedoppgave i psykologi, Oslo universitet, 1970.

SOU. *Pensionär '75. En kartläggning med framtidsaspekter*. Stockholm: SOU 1977:98, Socialdepartementet, 1977.

SOU. *Dagens äldre. Fakta kring levnadsförhållanden*. Stockholm: SOU 1985:31, Socialdepartementet, 1985.

Spreitzer, E. and Snyder, E.E. Correlates of life satisfaction among the aged. *Journal of Gerontology, vol. 29*, 1974, pp. 454-458.

Streib, G.F. Social stratification and aging. In R.H. Binstock and E. Shanas (Eds.). *Handbook of the aging and the social sciences*. New York: Van Nostrand Reinhold Co, 1985.

Streib, G.F. and Schneider, C.J. *Retirement in American society: Impact and process*. Ithaca, N.Y.: Cornell University Press, 1971.

Svensson, T. *Aging and environment: Institutional aspects*. Linköping: Linköping Studies in Education, Dissertations No 21, 1984.

Thompson, G.B: Work versus leisure roles: An investigation of morale among employed and retired men. *Journal of Gerontology, vol. 28*, 1973, pp. 339-344.

Tissue, T. Another look at self-rated health among the elderly. *Journal of Gerontology, vol. 27*, 1972, pp. 91-94.

Titmus, R.M. *Essays on the welfare state*. London: George Allen & Unwin Ltd, 1958.

Tornstam, L. *Att åldras. Socialgerontologiska perspektiv*. Uppsala: Sociologiska institutionen, Uppsala universitet, 1973.

Tornstam, L. Health and self-perception. A systems theoretical approach. *Gerontologist, vol. 15*, 1975, pp. 264-270.

Tornstam, L. *Åldrandets socialpsykologi*. Stockholm: Rabén & Sjögren, 1978.

Tornstam, L. *Realiteter och föreställningar om vardagsproblem bland äldre, medelålders och yngre*. Uppsala: Arbetsrapport nr 1 från projektet Äldre i samhället förr, nu och i framtiden, 1981.

Tornstam, L. Tidsperspektiv, samhällsförändring. In L. Tornstam, B. Odén and A. Svanborg. *Äldre i samhället, del 1. Teorier och forskningsansatser*. Stockholm: Liber, 1982.

Traeldal, A. *A theoretical model of the relationship between internal-external locus of control and life satisfaction*. Jönköping: Rapport nr 6 från Institutet för gerontologi, 1972.

UN *International definition and measurement of standards and levels of living*. New York: United Nations publications, 54. IV. 5, 1954.

UN *International definition and measurement of standards and levels of living*. (An interim report). New York: United Nations Publications, 61. IV. 7, 1961.

Vogel, J., Andersson, L-G., Davidsson, U. and Häll, L. *Ojämlikheten i Sverige, Utveckling och nuläge*. Stockholm: Levnadsförhållanden, rapport nr 51, Statistiska centralbyrån, 1987.

Welford, A.T. Motor performance. In J.E. Birren and K.W. Schaie (Eds.). *Handbook of the psychology of aging*. New York: Van Nostrand Reinhold Co, 1977.

Werdelin, I. *Handbook of educational research methods: Research designs*. Linköping: Linköping studies in education, report no 7, Linköping University, 1982.

WHO. *The first ten years of World Health Organization*. Geneva: World Health Organization, 1958.

Wärneryd, B., Östlin, P. and Thorslund, M. *Levnadsförhållanden. Appendix II. Kvaliteten vid retrospektiva frågor om tidigare yrkesexponering*. Stockholm: Statistiska centralbyrån, 1989.

Öberg, P., Ruth, J-E. and Tornstam, L. Ensamhetsupplevelser hos de äldre I: Sociala förhållanden. *Gerontologia, vol. 2*, 1987, pp. 44-55.

Jönköpingsundersökningen 1983.
Frågeformulär 20 - 80 år.

1. **Ålder?**
1) 20, 2) 30, 3) 40, 4) 50, 5) 60, 6) 70, 7) 80

2. **Kön**
1) Kvinna, 2) Man

3. **Vilket är ditt civilstånd?**
1) Gift/sambo, 2) Ogift, 3) Skild, 4) Änka/änkling

4. **Om skild eller änka/änkling, sedan när?**
.... (82 = 1, 81 = 2, 80 = 3, ... o.s.v)

5a **Gift/sammanboende. Hur stor är hushållets sammanlagda inkomst efter skatt?**

1) Mindre än 50.000 kr/år
2) Mellan 50.000 och 75.000 kr/år
3) Mellan 75.000 och 100.000 kr/år
4) Mellan 100.000 och 150.000 kr/år
5) Mer än 150.000 kr/år

5b **Annan än gift/sammanboende. Hur stor är Din inkomst före skatt?**

1) Mindre än 50.000 kr/år
2) Mellan 50.000 och 75.000 kr/år
3) Mellan 75.000 och 100.000 kr/år
4) Mellan 100.000 och 150.000 kr/år
5) Mer än 150.000 kr/år

6. **Vilken utbildningsnivå stämmer bäst in på Dig?**

1) Genomgången folkskola mindre än 6 år
2) Genomgången folkskola
3) Genomgången realskola/grundskola
4) Genomgången folkhögskola
5) Genomgången fackskola/yrkesskola/ gymnasieskola 2-åriga linjer
6) Genomgången gymnasieskola 3- och 4-åriga linjer, studentexamen
7) Genomgången akademisk examen

7. **Vilket yrke/titel har Du?**

1) Anställd
2) Studerande
3) Hemmafru
4) Pensionär
5) Förtidspensionär
6) Arbetslös
7) Annat. Vad? ....

8. **Om 1) I vilket yrke? om 2) Ditt kommande yrke?**
om 3) Din makes yrke om 4), 5), 6) Ditt tidigare yrke.
Anm. Yrken kodades enligt SCB (1982).

1) Ej facklärda arbetare, varuproducerande
2) Ej facklärda arbetare, tjänsteproducerande
3) Facklärda arbetare, varuproducerande
4) Facklärda arbetare, tjänsteproducerande
5) Små- eller medelstora lantbrukare
6) Lägre tjänstemän, utan underställda
7) Lägre tjänstemän, med eller utan underställda
8) Tjänstemän på mellannivå
9) Högre tjänstemän med eller utan utan underställda
10) Ledande befattningar
11) Fria yrkesutövare med akademikeryrken
12) Företagare

9. **Vilket slags bostad bor Du i?**
   1) Radhus/villa
   2) Flerfamiljshus
   3) Annat (studenthus, ålderdomshem osv)

10. **Anser Du Dig vara fullt frisk?**
    1) Ja 2) Nej. Om "nej", vilken eller vilka sjukdomar har Du?
    (Högst tre kunde anges).

11. **Står Du för närvarande under läkarbehandling eller går Du på regelbundna kontroller för någon sjukdom?**
    1) Ja 2) Nej. Om "ja", för vilken eller vilka sjukdomar?
    (Högst tre kunde anges).

12. **Äter Du regelbundet någon eller några mediciner?**
    1) Ja 2) Nej. Om "ja", vilken eller vilka mediciner?
    (Högst tre kunde anges).

13. **Bor Du ensam eller hur många finns det i hushållet inräknat Dig själv?**
    1) Ensam, 2 +) Annat antal (inräknat Dig själv)

14. **Har Du några barn?**
    0) Nej 1 +) Ja, antal ....

15. **Om barn, hur många av dessa är hemmavarande?**
    1 +) Antal ....

16. **Hur ofta brukar Du umgås med anhöriga, vänner och bekanta?**
    1) Dagligen
    2) Flera gånger/vecka
    3) Ungefär 1 gång/vecka
    4) Ungefär 1 gång/2 veckor
    5) Ungefär 1 gång/månad,
    6) Mera sällan,
    7) Aldrig

17. **Tycker Du att Du har fin kontakt med anhöriga, vänner och bekanta?**
1) Nej, inte alls
2) Nej, knappast
3) Svårt att direkt ta ställning till
4) Ja, i viss mån
5) Ja, i hög grad

18. **Hur många personer träffar och pratar Du med ungefär på en dag?**
1 +) Antal .... st

19. **Händer det att Du besväras av ensamhetskänslor?**
1) Aldrig
2) Sällan
3) Ofta
4) Alltid

20. **Känner Du Dig som del i en bekantskapskrets?**
1) Ja, i hög grad
2) Ja, i viss mån
3) Nej, knappast
4) Nej, inte alls

21. **Har Du bekanta Du kan prata med?**
1) Ja, i hög grad
2) Ja, i viss mån
3) Nej, knappast
4) Nej, inte alls

22. **Saknar Du sällskap?**
1) Nej, inte alls
2) Nej, knappast
3) Ja, i viss mån
4) Ja, i hög grad

23. **Känner Du Dig övergiven?**
1) Nej, inte alls
2) Nej, knappast
3) Ja, i viss mån
4) Ja, i hög grad

24. **Om Du har personliga problem av något slag, har Du då någon/några som Du öppet och ärligt kan prata med om dessa problem?**
1) Ja, i hög grad
2) Ja, i viss mån
3) Nej, knappast
4) Nej, inte alls

25. **I vilken utsträckning ägnar Du Dig åt aktiviteter som Du gör för Dig själv (t ex radio/TV, läsning, hobby osv)?**

1) I liten omfattning	3) I ganska stor omfattning
2) I ganska liten omfattning	4) I stor omfattning

26. **I vilken utsträckning ägnar Du Dig åt aktiviteter tillsammans med "nära och kära", med vänner osv?**

1) I liten omfattning	3) I ganska stor omfattning
2) I ganska liten omfattning	4) I stor omfattning

27. **I vilken utsträckning ägnar Du Dig åt aktiviteter som är organiserade av andra (t ex religiösa, pensionärsorganisation, hobby-, idrottsorganisation, politisk organisation o.s.v)?**

1) I liten omfattning	3) I ganska stor omfattning
2) I ganska liten omfattning	4) I stor omfattning

28. **Hur trivs Du med tillvaron på det hela taget?**

1) Mycket dåligt
2) Dåligt
3) Ganska dåligt
4) Ganska bra
5) Bra
6) Mycket bra

29. **Händer det att Du känner Dig otillräcklig och svag?**

1) Ja, i hög grad	3) Nej, knappast
2) Ja, i viss mån	4) Nej, inte alls

30. **Anser Du att Du har personer i Din omgivning som bryr sig om vad Du tycker och tänker?**

1) Nej, inte alls	3) Ja, i viss mån
2) Nej, knappast	4) Ja, i hög grad

31. **Tycker Du att Din ekonomiska situation hindrar Dig att göra det Du själv vill?**

1) Ja, i hög grad	3) Nej, knappast
2) Ja, i viss mån	4) Nej, inte alls

32. **När något som Du tycker är bra händer Dig, tycker Du då att det i första hand beror på Dig själv (och att ödet eller tur inte har med det hela att göra)?**
1) Ja, beror i hög grad på mig själv
2) Ja, beror i viss mån på mig själv
3) Nej, beror knappast på mig själv
4) Nej, beror inte alls på mig själv

33. **När något som Du tycker är dåligt händer Dig, tycker Du då att det i första hand beror på Dig själv (och att ödet eller tur inte har med det hela att göra)?**
1) Ja, beror i hög grad på mig själv
2) Ja, beror i viss mån på mig själv
3) Nej, beror knappast på mig själv
4) Nej, beror inte alls på mig själv

34. **Känner Du Dig säker och stark?**
1) Nej, aldrig
2) Nej, sällan
3) Ja, ofta
4) Ja, alltid

35. **Tycker Du att myndigheter och liknande bryr sig om vad Du tycker och tänker (och att de inte kan besluta alldeles som de själva vill)?**
1) Nej, inte alls (bryr de sig om)
2) Nej, knappast (bryr de sig om)
3) Ja, i viss mån (bryr de sig om)
4) Ja, i hög grad (bryr de sig om)

36. **Hur tycker Du på det hela taget att Ditt hälsotillstånd är för närvarande?**
1) Dåligt
2) Ganska dåligt
3) Ganska bra
4) Bra

A TRANSLATION OF THE QUESTIONNAIRE

The following is an English translation of the questionnaire in condensed form. In doubtful cases, the Swedish word or construction is given between brackets.

THE QUESTIONNAIRE

I **Age**
1) 20, 2) 30, 3) 40, 4) 50, 5) 60, 6) 70, 7) 80

II **Sex**
1) Woman 2) Man

III **Marital status:**
1) Married/living with someone (sambo)
2) Unmarried
3) Divorced
4) Widow/-er

IV **If divorced or widow/-er, since when?**
....

V **Income. Married: Total yearly income in family (hushållets sammanlagda inkomst) before tax. Single: Yearly income before tax.**

1) Less than SEK 50,000
2) SEK 50,000 - 75,000
3) SEK 75,000 - 100,000
4) SEK 100,000 - 150,000
5) More than SEK 150,0 00

VI **Education**

1) Elementary school less than six years
2) Elementary school
3) Comprehensive school (realskola/grundskola)
4) Folk high school (folkhögskola)
5) 2-year vocational school (fackskola/ yrkesskola/ gymnasieskola 2-åriga linjer)
6) Theoretical secondary school (gymnasieskola 3- och 4-åriga linjer, studentex)
7) University degree (akademisk examen)

VII **Employment status:**

1) Employed
2) Student
3) Housewife
4) Retired
5) Preretired
6) Unemployed
7) Other

VIII **If 1) what occupation, if 2) future occupation, if 3) husband's occupation, if 4), 5), 6) earlier occupation, if 7) other.**

NOTE: Responses were coded according to SCB (1982). Socio-economic classification:

1) Unskilled employees in goods production
2) Unskilled employees in service production
3) Skilled employees in goods production
4) Skilled employees in service production
5) Small- or medium-scale farmers
6) Assistant non-manual employees, lower level
7) Assistant non-manual employees, level unspecified
8) Intermediate non-manual employees
9) Employed professionals, with or without subordinates
10) Upper-level executives
11) Self-employed professionals
12) Entrepreneurs

IX **How do you live (vilket slags bostad bor du i)?**
1) Flat/apartment (lägenhet i flerfamiljshus)
2) Single family dwelling (radhus/villa)
3) Other (for example student hostel, home for aged people, etc.).

X **Do you consider yourself completely healthy?**
1) Yes 2) No. If no, what illness/-es do you have?
(At most three could be stated).

XI **Are you presently being treated by a physician or are you being regularly checked for any illness?**
1) No 2) Yes. If yes, what illness/-es?
(At most three could be stated).

XII **Do you regularly take any medicines?**
1) No 2) Yes. If yes, what kind?
(At most three could be stated).

XIII **Do you live alone or how many live with you?**
1) Alone 2) Number of persons including yourself

XIV **Do you have any children?**
0) No 1, 2, 3 etc) Number of children

XVI **How often do you usually get together (brukar du umgås) with relatives, friends or acquaintances?**
1) Daily
2) Many times a week
3) About once a week
4) About once a fortnight
5) About once a month
6) Less than once a month
7) Never

XVII **Do you feel you have good contact with relatives, friends and acquaintances?**
1) No, not at all
2) No, hardly (knappast)
3) Difficult to decide
4) Yes, to some extent
5) Yes, to a high extent

XVIII **Approximately how many persons do you meet and talk to during a day?**
1-) Number

XIX **Does it happen that you are bothered with feelings of loneliness?**
1) Never
2) Seldom
3) Often
4) Always

XX **Do you feel part of a group of friends (del i en bekantskapskrets)?**
1) Yes, to a high extent
2) Yes, to some extent
3) No, hardly
4) No, not at all

XXI **Do you know people (Har du bekanta) you can talk to?**
1-4 See previous question

XXII **Do you lack companionship (saknar sällskap)?**
1) No, not at all
2) No, hardly
3) Yes, to some extent
4) Yes, to a high extent

XXIII **Do you feel left out (övergiven)?**
1-4) see previous question

XXIV **If you have personal problems of some kind, do you know somebody you freely and honestly can talk to about these problems (har du någon/några som du öppet och ärligt kan prata med om dessa problem)?**
1) Yes, to a high degree
2) Yes, to some degree
3) No, hardly
4) No, not at all

XXV **To what extent do you devote yourself (utsträckning ägnar du dig) to activities you do by yourself (e.g. radio/TV, reading, hobbies, etc)?**

1) To a low extent
2) To a fairly low extent
3) To a fairly large extent
4) To a large extent

XXVI **To what extent do you devote yourself to activities together with close relatives, friends etc. (tillsammans med "nära och kära", med vänner osv)?**

1-4) see previous question

XXVII **To what extent do you devote yourself to activities organized by others (e.g. religious, organizations for the retired, hobby, sports, political organizations, etc)?**

1-4) see previous question

XXVIII **How well do you get on with life in broad terms (Hur trivs du medtillvaron på det hela taget)?**

1) Very bad
2) Bad
3) Rather bad
4) Fairly well
5) Well
6) Very well

XXIX **Does it happen that you feel insufficient and weak (otillräcklig och svag)?**

1) Yes, to a high extent
2) Yes, to some extent
3) No, hardly
4) No, not at all

XXX **Do you feel you have persons around you who care about what you say and feel (Anser du att du har personer i din omgivning som bryr sig om vad du tycker och tänker)?**

1) No, not at all
2) No, hardly
3) Yes, to some extent
4) Yes, to a high extent

XXXI **Do you feel (tycker du) your financial situation prevents you from doing what you want to do (hindrar dig att göra det du själv vill)?**

1) Yes, to a high extent
2) Yes, to some extent
3) No, hardly
4) No, not at all

XXXII **When something you think is good happens to you, do you then think that this is primarily due to yourself (i första hand beror på dig själv) (and that fate and luck (ödet och tur) have nothing to do with it)?**

1) Yes, due to myself to a high extent
2) Yes, due to myself to some extent
3) No, hardly due to myself
4) No, not at all due to myself

XXXIII **When something you think is bad happens to you, do you then think that this is primarily due to yourself (and that fate and bad luck have nothing to do with it)?**

1-4) see previous question

XXXIV **Do you feel self-confident and strong (säker och stark)?**

1) No, never
2) No, seldom
3) Yes, often
4) Yes, always

XXXV **Do you think that authorities or the like, take account of what you say and feel (myndigheter och liknande bryr sig om vad du tänker och tycker) (And that they cannot decide altogether as they themselves would wish)?**

1) No, they do not take a ccount of me at all
2) No, they hardly take account of me
3) Yes, they take account of me to some extent
4) Yes, they take account of me to a high extent

XXXVI **How, in broad terms, do you think your health is at present (Hur tycker du på det hela taget att ditt hälsotillstånd är för närvarande)?**

APPENDIX III

THE INDICES

In this appendix the indices are summarized. The Roman numerals refer to the questions in Appendix II and the Arabic figures within brackets to the choice of answers given in Appendix II.

The indices at a glance

B_1
Self-reported health

No illnesses	X	(1)
No check-ups	XI	(1)
No medicine	XII	(1)

B_2
Primary social network

Married	III	(1)
Have child	XIV	(1-)
Interaction	XVI	(1)

B_3
Social position

Hi education	V	(6,7)
Hi work pos.	VIII	(9-12)
Hi income	IV	((4)5)

D_1
Perceived activity level

Solitary	XXV
Good friends	XXVI
Formally	XXVII

D_2
Loneliness

Lonely	XIX
No friends	XX
None to talk to	XXI
Lack companions	XXII
Feel left out	XXIII

D_3
Life satisfaction

Get on with life	XXVIII

C_3
Perceived institutional assets

Good finances	XXXI	(3,4)
Social power	XXXVI	(3,4)

C_2
Perceived interpersonal assets

Quality in network	XVII	(5)
Power in network	XXX	(4)

C_1
Perceived individual assets

Good health	XXXVI	(4)
Hi ego-strength	XXIV + XXXIV	

The actual assets

B_1 Self-reported health

B_{1A} No illness, 1 (X(1)); Any illness, 0 (X(2)).
B_{1B} Not regularly being treated or checked by physician, 1 (XI(1)); Regularly being treated or checked by physician, 0(XI(2)).
B_{1C} No medicines, 1 (XI I (1)); Any medicines, 0 (XII(2)).

B_2 Primary social network.

B_{2A} Married, 1 (III(1)); Not married, 0 (III(2-4)).
B_{2B} Have at least one child, 1 (XIV (1-)); No child, 0 (IV(0)).
B_{2C} Daily interaction, 1 (XVI (1)); No daily interaction, 0 (XVI (2-7).

B_3 Social position.

B_{3A} Higher education, 1 (VI (6,7)); Lower education, 0 (VI (1-5)).
B_{3B} Higher work position, 1 (VIII (9-12); Lower work position, 0 (VIII (1-8)).
B_{3C} Higher income, 1 (V married (5), not married (4,5); Lower income, 0 (V married (1-4), not married (1-3)).

Perceived assets

C_1 Perceived individual assets.

C_{1A} Subjective good health, 1 (XXXVI(4)); subjective not good health, 0 (XXXVI(1-3).
C_{1B} More ego-strength, 1 (from XXIX and XXXIV as described on pages 94-95); Less ego-strength, 0 (from XXIX and XXXIV as described on pages 94-95)

C_2 Perceived interpersonal assets.

C_{2A}	More quality in social network, 1 (XVII (5)); less quality in social network, 0 (XVII (1-4)).
C_{2B}	More power in social network, 1 (XXX (4)); less power in social network, 0 (XXX(1-3)).
C_3	C_3 Perceived institutional assets.
C_{3A}	Better perceived finances, 1 (XXXI(3,4)); lower perceived finances, 0 (XXXI(1,2)).
C_{3B}	More perceived social power, 1 (XXXV (3,4)); less perceived social power, 0 (XXXV(1,2)).

The dependent variables

D_1	Perceived activity level. Activities you do by yourself (XXV) + Activities together with close relatives, friends etc (XXVI) + Formally organized activities (XXVII). Higher figures = higher activity.
D_2	Loneliness. Bothered with loneliness (XIX) + Feel part of a group of friends (XX) + Know people to talk to (XXI) + Lack companionship (XXII) + Feel left out (XXIII). Higher figures = more loneliness.
D_3	D_3 Life satisfaction (XXVIII).

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